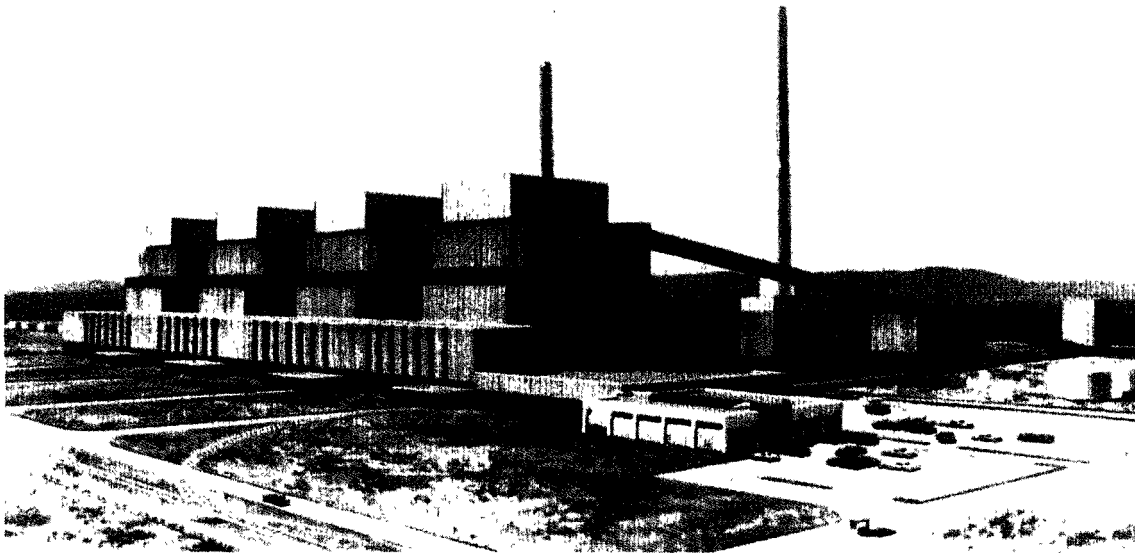


# **THE HISTORY OF INTERMOUNTAIN POWER SERVICE CORPORATION**

## **Background**

The idea for the Intermountain Power Project (IPP), started in the early 1970's with informal discussions between several Utah communities seeking a reliable source for future demands of electrical energy. As these discussions continued, a decision was made to enlarge the circle of possible participants by contacting, among others, Los Angeles Department of Water and Power (LADWP) to see if they had similar interests. As meetings continued, now including LADWP, planning for a Project began to unfold. In 1974, the preliminary ideas and plans started to give way to licensing and siting studies.

In 1979 when the location in Millard County was approved by the United States Secretary of the Interior for the construction and operation of a power plant, all the meetings and years of hard work paid off. Now, a totally new set of challenges emerged, such as selecting a Project manager, a construction company, and an organization to staff and operate the power plant. A contract was approved by the Project participants designating LADWP as the Construction Manager and Operating Agent. Construction on the Project began in September 1981. The Project originally was designed as a four-unit, 3,000 megawatt plant requiring nearly \$9 billion to complete. The overall scope of the Project included a Southern Transmission System which consists of Converter Stations at the IPP site and Adelanto, California, with a 490 mile DC transmission system connecting them. The IPP Converter Station converts 345 kV AC to 500 kV DC. The Adelanto Converter Station converts 500 kV



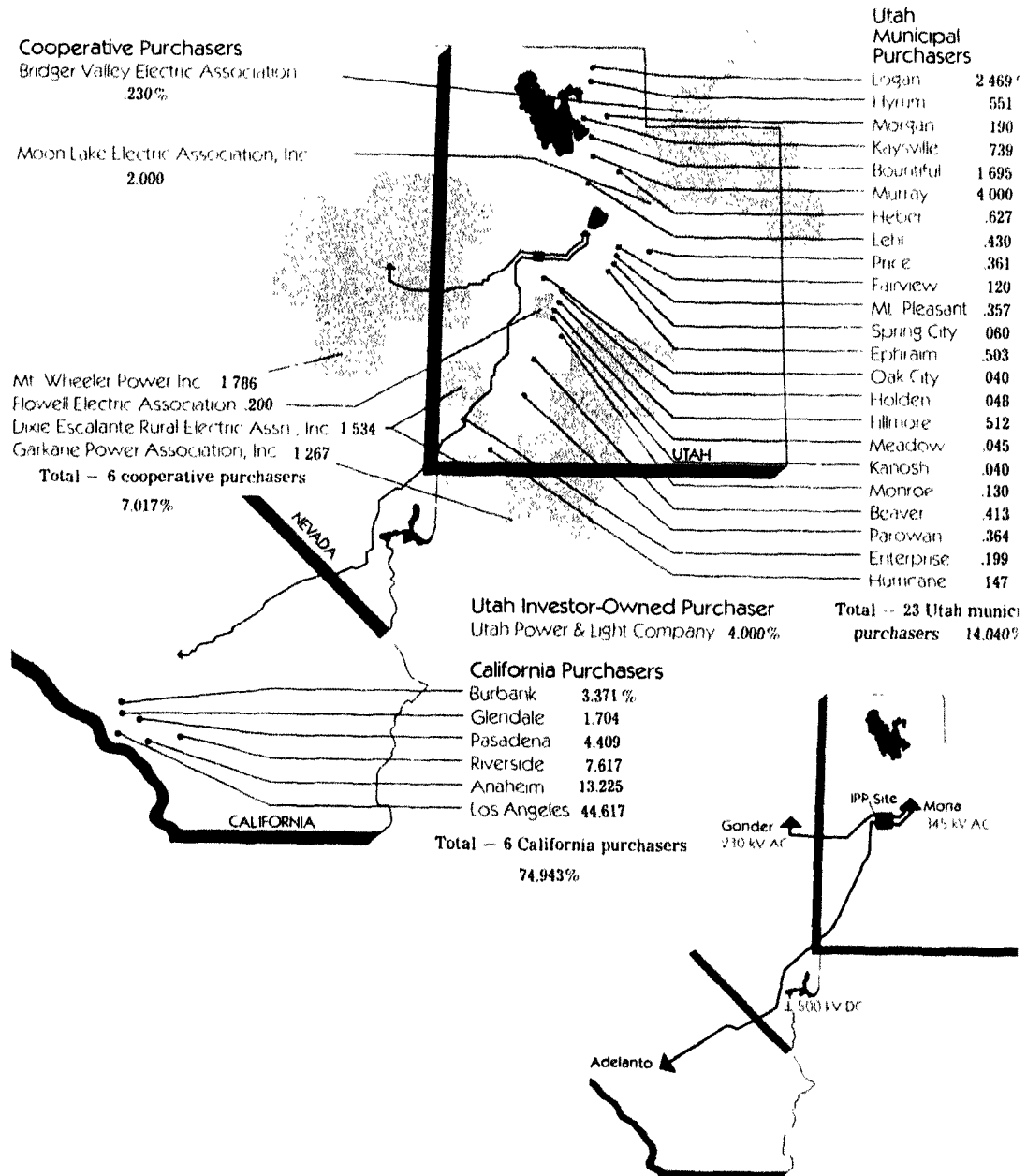
An artist's rendition of IPP four-unit power plant.

DC to 500 kV AC. The Utah participants had organized the Intermountain Power Agency (IPA) to be the entity of record that owns IPP. IPA and LADWP worked together to organize a company that would staff and operate the power plant. This new company would be Intermountain Power Service Corporation (IPSC).



# PARTICIPANTS

## Participants' entitlement shares



## 1982 — The Starting Point

### IPSC

**Organization** — IPSC was organized and incorporated on May 3, 1982. The purpose of IPSC, under the direction of the Operating Agent (LADWP), is to provide trained individuals to accomplish safe, economic, and dependable operation and maintenance of the Intermountain Power Facility. A Board of Directors made up of four representatives from LADWP and two from IPA serves as the governing body for IPSC. The six original board members were: Raymond C. Burt, Chairman; Arthur S. Buchanan, Secretary; Robert Shepherd, Norman E. Nichols, R. Leon Bowler, and Berry Hutchings.

**Selecting a President and Chief Operations Officer** — After IPSC was created, the Board of Directors selected John A. Novobilski as the temporary President and Chief Operations Officer. It was his job to replace himself with the person who would be the new President and Chief Operations Officer. This new President would be responsible for the staffing, directing, and building Intermountain Power Service Corporation. Following several months of work, John A. Novobilski selected and recommended to the Board of Directors that S. Gale Chapman be the new President and Chief Operations Officer. Mr. Chapman was hired on October 25, 1982. Mr. Chapman was uniquely qualified, in part, because he had worked for Utah Power and Light for approximately 27 years in coal-fired power plants; and, he had gained valuable experience working for the Utah Railroad and the D&RGW Railroad.



S. Gale Chapman IPSC President and Chief Operations Officer.

**Staff and Train a Work Force** — The charge given by the Board of Directors to the new President was to staff and operate a yet-to-be-built power plant with a yet-to-be-hired and/or trained work force.

Further, the work force was to come from the Central Utah area. Thus, the new employees would for the most part, not have any prior power plant experience.

**State Regulation Exemption** — The Utah Attorney General, David L. Wilkinson, issued an opinion that IPP was not subject to the regulatory authority of the Utah Public Service Commission. The opinion holds that a 1977 Utah law that requires state regulation of power projects developed by municipal coalitions doesn't apply to the Intermountain Power Project because studies for the coal-fired generating complex began in 1974 before the law was passed. The opinion concluded that the Project scheduled for completion in 1989 wasn't a public utility or a private corporation and was, therefore, exempt from state regulation under existing laws.

**New Hire (Staff)** — In December, Mr. Terry Hyde was hired as the Administrative Manager.

**Number of Employees** — By the end of the year, the number of employees was five.

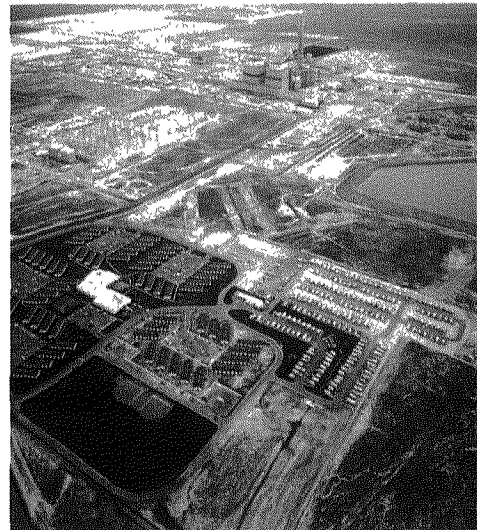
## LADWP

**Project Percent Complete** — Construction of the Project was considered 18 percent complete.

**Construction Worker Housing** — In the fall, the Construction Worker Housing (CWH) was opened. By the end of the year, 182 workers were residing in the complex.

The facility had 750 single status housing units. These units helped take the pressure off the housing market in nearby Delta and the surrounding area.

**Atrium** — The construction of the IPSC Administration Building included an atrium located in the center of the building. The size of the atrium is quite large; it will allow trees to grow two stories high. The goal for the atrium was to be a high quality centerpiece of the building. It would seem the plan worked quite well judging from the number of positive comments about the atrium. The quality of the environment comes, in part, from the running water, a walkway made from black riverbed pebbles, pools for goldfish, and a number of unusual plants. The atrium with its trees and plants creates an atmosphere that draws visitors, guests, and employees to its peaceful surroundings.



During peak of construction, trailers, campers, and mobile homes converged on the Construction Workers Housing Complex.

The plan for this living atrium allows for the trees and plants to be replaced as needed. The fish and the pools will be kept active and well maintained to make the atmosphere not only pleasing to sight, but to sound. It has been, and will continue to be, a nice reminder of the importance of our environment.



Atrium black riverbed pebble walkway, pond, and trees.

### **Operating Agent**

**Representative** — When the Intermountain Power Service Corporation (IPSC) was created, the Los Angeles Department of Water and Power (LADWP) established a new position that was designed to serve as the contact point between the two organizations. The title for the position was, Operating Agent for the Intermountain Power Project. Mr. Arthur S. Buchanan was the first person to be named as the Operating Agent Representative.

## **IPA**

**Project Size** — The size of the Project was scaled down from four to two 750 megawatt units and the cost of the Project was reduced from \$9 billion to \$5.5 billion. IPA was to finance \$4.4 billion for the plant and northern transmission system. The California participants were to finance the southern transmission system.

## **Other**

**Consultants Hired** — Benefits — Towers, Perrin, Forster, and Crosby (TPF&C)  
Legal — Fabian & Clendenin  
Education — General Physics

**Humanitarian Effort** — A December ice storm and fog disoriented hundreds of small birds called "Grebes." These birds migrate from Canada to Mexico and in the storm, homed in on the lights of IPP. Grebes are helpless on land because their feet are placed too far back to support their weight; they must be in water to get up enough speed to become airborne. The Utah Division of Wildlife asked for help in getting the birds to water so they could resume their journey. Employees from IPP, and some of the contractors — Centric, Bechtel, and Jelco, members of the Audubon Society, and Utah Fish and Game employees all joined together to get the Grebes rounded up and back into water so they could continue their migration. It seems that the Sevier River is

in the flight path of the birds as they travel from the warm waters of Acapulco, Mexico to the cold waters of the Arctic Circle.

**Medical and Dental Insurance** — In August the Board of Directors authorized a benefit program that included medical and dental insurance for the employees of IPSC. The Aetna Insurance Company provided the coverage for the employees.

## 1983 — A Year of New Beginnings

### IPSC

**Organization** — As 1983 began, a small staff of five employees had been pulled together and a payroll and benefits system had been put in place.

**New Hire (Staff)** — In February, Mr. Robert A. Davis was hired as the Superintendent of Operations. He was also appointed to the position of Corporate Vice President.

In March, Mr. Richard K. Caudron was hired as the Superintendent of Maintenance.

In May, Mr. Dennis K. Killian was hired as the Superintendent of Technical Services.

**Trainees** — The next major requirement was to get a group of prospective candidates screened and tested so the first class of students could be identified. However, before the class could be started, training material had to be developed and a copy of the text made for each student.

The first group of 30 trainees was hired in March; the second group of 33 in September. Selection of the trainees was a time-consuming process. Approximately 10,000 resumes had been received from individuals interested in working in the new power plant. An invitation to take a general aptitude test was extended to all prospective trainees who had submitted a resume.

The test required a general comprehension of reading, basic math, and general physics. About 60 percent of the candidates were eliminated due to low test scores. Those with the highest passing scores were invited to an interview with two members of management to determine their general ability to work in a power plant. This screened out another 10 percent. Starting with those having the highest scores, groups of 30-35 were hired at \$7.45 per hour and placed in a 9-day evaluation program. During this time, they were in a classroom setting and taught in a method consisting of a lecture and test, followed by another lecture and test. All the student employees were required to keep an 80 percent average on all tests, and not less than 70 percent on any individual test. About 10 percent were eliminated because they could not maintain the required test scores. Those who were successful through the 9-day evaluation were placed in a six-month study course covering the Principals of Steam Electric Generation (PSEG). At the end of the PSEG course, the employees were placed in specialized training areas such as: Operations, Instrumentation and Control Technician, Electrical, Mechanical Maintenance, DC Converter Station Operator, and Laboratory Technician.

This aggressive training program was necessary to bring the trainees to the point where they could operate a power plant without ever having worked in one. The final step to help the new employees experience how a power plant operates involved working one

week in an operating power plant. The first two groups of employees were sent to Craig, Colorado to spend some time in Colorado Ute's Craig Plant. The purpose of the trip was to see how employees report for duty at a power plant and to follow movement of crews and supervisors to see what they had to do to keep the power plant running. Some of the shifts were during the day and some were at night to get a true experience of what things would be like once IPP was on line. This opportunity of traveling to Craig, Colorado was repeated two times so that the first two groups of trainees and their supervisors had a chance to work together in as close to real conditions as could be created.

**Savings and Retirement Committee** — The IPSC Board of Directors approved the creation of a Savings and Retirement Committee. The Committee is responsible for the operation and direction of the Savings and the Retirement Plans approved by the Board of Directors. At the end of the year the Savings and Retirement Committee was organized. Reece Nielsen was appointed as the Intermountain Power Agency representative. S. Gale Chapman, Terry Hyde, Roger W. Stowell, and Guy K. Tipton were appointed as the Intermountain Power Service Corporation representatives.

**Savings Plan** — A 401(k) savings plan for employees was put into effect at the end of the year with Zions Bank as the Trustee.

**Pension Plan** — A pension plan for IPSC employees was put into effect at the end of the year. Zions Bank was selected as the trustee.

**MPAC System** — A contract with a software development company by the name of "The System Works" was awarded for the purchase of a fully integrated plant maintenance, material management, procurement, and accounting cost control (MPAC) System. The MPAC system was originally designed for a paper mill. Because the original architecture of the software was for a paper mill, it took months of work to get the system modified to meet the needs of a power plant. The goal was to have a system that tied all work related activities and information together, and could provide all users with informational updates at any time. These updates could show the status of the work order and all related events such as tracking the time spent on the job, parts on order, the process of paying vendors, and returning tools to the warehouse. For a typical work order, any employee could place the work order in the system.

After proper approval, the work order would be sent to the Planner over that area. The Planner/Scheduler would then schedule the craftsmen and the tools needed for that specific job and work with the supervisor over that area to coordinate a time for the Project to be complete. Once the Project began, the time would be tracked on electronic time sheets. This would allow for detailed tracking of individual time and allocating the hours to the correct project. When the work was complete, the system would charge the information to the correct cost centers. It would also place the orders for replacement material and parts and send the Purchasing and Accounting groups the

information necessary to process invoices for payment and time sheets to start the payroll processing system. In its final steps, it would allow for the tracking of tools that the Warehouse had lent for the job and update the time estimates used by the Planners for doing the job in the future.

This totally integrated system would allow for electronic messages and a faster flow of information. It also gave management a better tool to evaluate the effectiveness and time requirements necessary to keep the power plant operating.

**Corporate Officer** — In April, Mr. Terry Hyde, the Administrative Manager, was appointed as the Corporate Secretary/Treasurer.

**Simulator** — In June a contract was awarded to Electronic Associates Inc., (EAI), located in New Jersey, for the development and construction of a full scope control room simulator. Mr. Steve Stewart was assigned as the coordinator to oversee the contractor. The system was built from the same detailed drawings used by the contractors to build the real control room panels. According to the contractor, the simulator was the most complex system ever built by EAI. Steve lived in New Jersey during the fourteen months that it took to build the simulator.

**Management Philosophy** — The concept of Management By Objectives (MBO) has been the cornerstone of philosophy for the management of IPSC by the President and Chief Operations Officer and all Department Heads. At the start of each fiscal year, the IPSC President and the Department Heads establish goals for the Corporation. Each salaried employee is then able to direct their support toward meeting the corporate goals through writing a personal Responsibilities, Goals, and Objectives (RGO) Statement to accomplish those corporate goals which are in their area of control. Other goals the employee and supervisor feel important are also made a part of the RGO. Intermediate goals and objectives are written and reviewed each quarter to measure progress and ensure the goals will be accomplished. The annual Performance Review is determined by evaluating two key components — the RGO and the Performance Profile. Together they are referred to as a Performance Evaluation. The Performance Profile consists of three questions for each of ten areas of performance measurement. The performance measurements may include qualities such as communications, ability to work with others, quality of work, etc.

Each question is scored in the range of 1 to 5, depending on the degree of skill or accomplishment, with 5 being the highest score. The employee is given recognition for the two areas with the highest scores. The supervisor is required to provide written direction on what the employee can do to improve the two areas with the lowest scores. The employee is able, with this direction, to work on specific objectives he can control to improve job performance.

**Number of Employees** — By the end of the year, the number of employees was 87.



## LADWP

**Operating Agent Representative** — Due to increased demands on Mr. Arthur S. Buchanan, who was also serving as the Secretary to the IPSC Board of Directors, a new individual was appointed to the position of Operating Agent. Mr. Arthur S. Buchanan was replaced by Mr. Robert L. McMillen as the Operating Agent Representative.

**Construction Progress** — Construction moved to the point that on June 30, the fifth tier of steel on Unit 1 was completed.

**Congressman Visit** — The Project site was visited by Congressman Howard C. Nielson late in the year to see how the construction was moving along.

**Project Percent Complete** — Construction of the Project was considered 43 percent complete.

## IPA

**Coal Contracts** — Four long-term coal contracts, which would supply coal to the plant were executed by the agency. The contracts were for coal that comes from Utah. This meant several hundred new Utah jobs.

**Municipal Debt** — The largest new issue of municipal debt in history was financed, \$900 million of 1983 A Series Bonds.

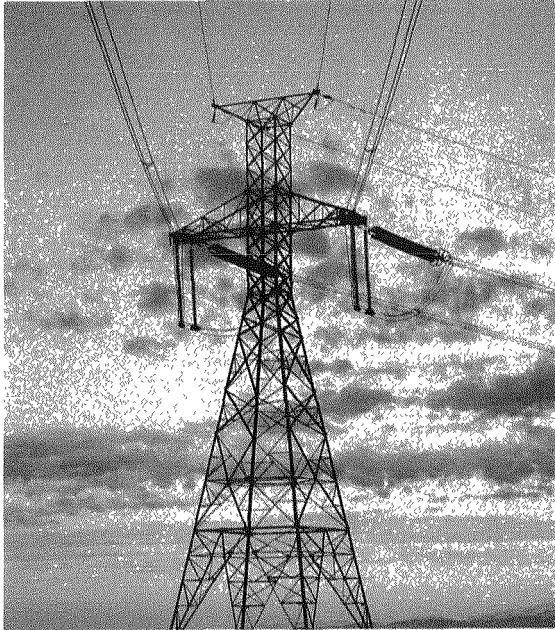
**New IPA Officer** — Mr. Joseph C. Fackrell, Executive Officer of IPA resigned to take a job out of state. Mr. Ronald L. Rencher was named as the General Manager of IPA to replace Mr. Fackrell.

**City of Delta Contract** — A multi-year project impact alleviation contract was signed with the city of Delta, for \$4 million. The purpose of this was to provide police services, water and sewer line development, recreation facilities, and housing required to support the construction workers and the eventual doubling of Delta's resident population.

**Millard County Contract** — A multi-year project impact alleviation contract was signed with Millard County for nearly \$7 million. Nearly \$3 million was to be used to build a road from Delta to the plant site. The remainder was to be used for law enforcement, recreation, equipment, capital facilities, and operating expenses.

## OTHER

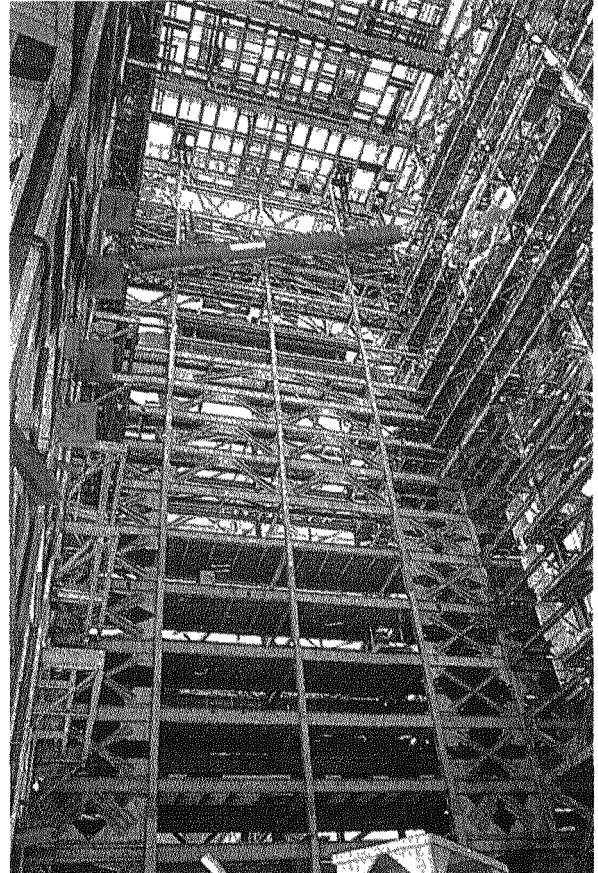
**Southern Transmission System** — In May the Southern California Public Power Authority (SCPPA) agreed to complete the \$1.1 billion financing requirement relating to the Southern Transmission System which would transmit Project power to the six California participants.



Transmission power lines deliver power to Southern California.

**Unit 1 Boiler Drum Lift** — Completed on September 20.

**Unit 1 Steel Erection** — Completed on October 12.



Boiler steam drum lifted into place.

**Dam Collapse** — Several West Millard County communities were ghost towns after several feet of flood water rushed through them when the DMAD dam broke. The dam is located north and east of Delta. The flood waters caused evacuation of Deseret, Sherwood Shores, and Oasis. The town of Hinckley was on alert, but was not evacuated. About 16,000 acre feet of water was unleashed when the spillway of the DMAD dam buckled.

## 1984 — A Year of Growth

### IPSC

**Trainees** — This was a year of major growth and development for IPSC. The first and second groups of trainees had gained a basic understanding about the requirements of their jobs and the need to be educated to run a state-of-the-art coal-fired power plant. Later in the year, the third, fourth, and fifth groups of trainees were hired. The fourth group of employees was hired to work in the Converter Station. As soon as they were hired, they were sent to work in California for six months of specialized training about converters, high voltage electricity, and transmission systems.

**Computerized Payroll System Went On Line** — The payroll system had been run on a Personal Computer (PC) for over a year and was just about at the limit of its capacity when a new system was put on line. The MPAC System was a major upgrade. It required a large amount of time and effort to get the system operational. It had been converted from a program developed for a paper mill. Many changes were required to meet the needs of a power plant. After the program had been modified, a very large commitment of time was required to enter the data which would make the system work. By the end of the year most of the computer supported functions were performing as expected.

**New Hire (Staff)** — In February, Mr. Richard W. Brewster was hired as the Converter Station Manager.

In June, Mr. Norman A. Mincer was hired as the Converter Station Manager. Norman replaced Richard W. Brewster, who had resigned.

**RSC Ground Breaking** — Groundbreaking was held for the Springville Railcar Service Center in March.

**Warehouse Transferred** — The Warehouse was transferred from Administration to the Maintenance Department. Some organizational restructuring was made to ensure the needs of the Operations and Maintenance Departments were being adequately supported by the Warehouse. This move was made based partially on the Administrative Department Head's lack of experience and unfamiliarity with rotating shifts, call outs, coverage, and warehousing knowledge. The Maintenance Department accepted this work group into their department and provided the necessary guidance to make the Warehouse a functional group.

As the Warehouse gained the necessary knowledge to support a 24-hours a day operation, they became a team player and a necessary part of the organization.

**MPAC System** — MPAC is a computerized maintenance management system developed by The System Works (TSW) of Atlanta, Georgia. It was implemented at the Intermountain Power Facility in August 1984. TSW, under contract, provided software maintenance support and enhancements to the MPAC application at IPSC's request. (See more information in the 1983 MPAC System article.)

**DMAD Pumping Station** — Originally, in order to get water into their canals for irrigation, the Delta and Melville Irrigation Companies had a diversion on the Sevier River near the present highway dip northeast of the airport. In the mid-1950's these two companies, along with the Deseret and Abraham Irrigation Companies, decided they needed a reservoir to store additional water. Consequently, they obtained approval and started construction on the DMAD Dam in 1959. Construction on this dam was completed in 1960. This dam is located on the Sevier River channel just upstream from the original diversion. The reservoir created by building the dam was called DMAD Reservoir (the acronym comes from the first letter in the name of each of the four irrigation companies which built the dam). The DMAD Reservoir has a total capacity of approximately 11,000 acre-feet. The water rights in the DMAD Reservoir belong to the four DMAD irrigation companies.

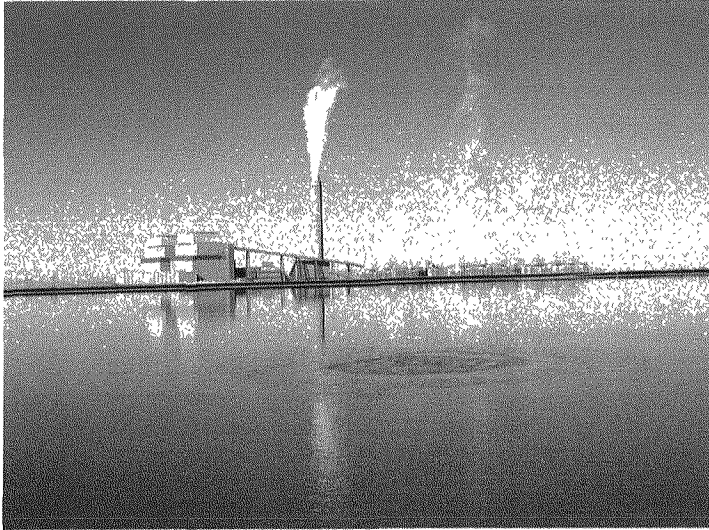
The Intermountain Power Project (IPP) purchased shares of stock in each of the four DMAD irrigation companies, plus Central Utah Water Company shares. IPP receives its proportionate share of the water that accrues to each of these companies. IPP uses its surface water from the Sevier River mainly for condenser cooling water. The DMAD Reservoir is located about eight miles from IPP. In order to convey the river water from the DMAD Reservoir to IPP, a pumping station and pipeline were constructed. The pumping station is located at the DMAD Reservoir.



DMAD Pumping Station and DMAD Reservoir.

Construction on the pumping station was started in late 1983 and completed in 1984. It has three large pumps which pump water from the reservoir into a 48-inch diameter concrete pipeline for conveyance to IPP.

Each of these pumps was designed to be capable of pumping up to 10,000 gallons per minute if pumped individually, or a total of about 26,000 gallons per minute if all three are pumped simultaneously. Due to demand charges of electricity, the three pumps are not pumped simultaneously.



On-site reservoir with power plant in the background.

**On-Site Reservoir** — The water from the DMAD Reservoir is pumped through the pipeline to the on-site reservoir located at IPP. This is a reservoir which was constructed on site in 1984 to store water pumped from the DMAD Reservoir. It was constructed in an existing gravel pit area. It has an approved safe-rated storage capacity of about 1860 acre-feet, which is just under a one month's supply of cooling water. There are 6 feet of free board above the safe-rated capacity which is left to prevent overtopping of the dike.

The surface area at the safe-rated capacity is about 60 acres. The vertical depth from the top of the dike to the bottom of the pond is about 40 to 41 feet. The on-site reservoir is lined with an 80 mil thick high-density polyethylene synthetic liner to reduce leakage. Water from the four existing production wells at IPP can also be routed into this reservoir for storage or to supplement the river water. Water is taken from this reservoir into the condenser cooling water system. The river water has to be chemically treated to remove some of the impurities prior to usage.

**Number of Employees** — By the end of the year, the number of employees was 264.

## LADWP

**Construction** — The operating agent was moving forward with their plans to see the Project continue "ahead of schedule and under budget." The construction work force reached a peak of approximately 4,600 employees.



Construction cranes and steel frame are outlined in the sunset.

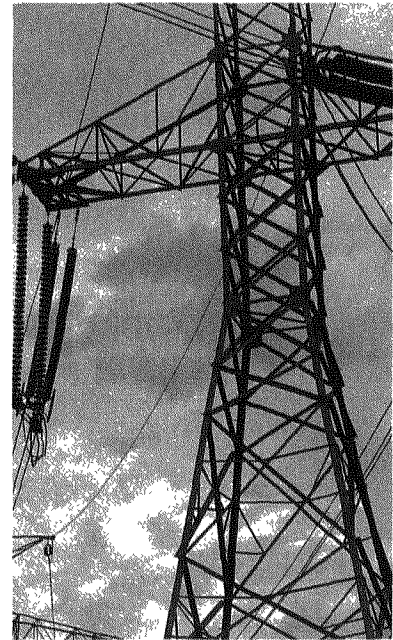
**Transmission Towers** — Transmission towers were being built to connect the power plant to the Utah Power and Light (UP&L) substation located near Mona, Utah to provide construction and startup power. The line was energized in November.

**Project Percent Complete** — Construction of the Project was considered 60 percent complete.

## IPA

**Financing** — By the end of the year the initial financing requirement of \$4.4 billion was secured.

**Coal Transportation** — A contract with Union Pacific was signed to transport the coal needed to operate IPP in Millard County. The value of the contract is estimated to be approximately \$100 million. The Union Pacific was to pick up 84-car unit trains, owned by IPA, from DRG&W and Utah Railway at various interchange points in Utah County and move the coal to the Project site.



Transmission towers used to connect power lines from power plant to substation near Mona, Utah.

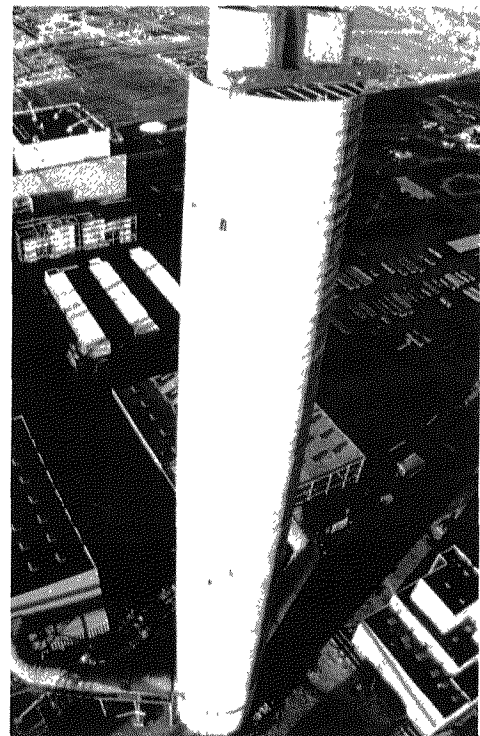
## Other

**Delta Hospital** — Groundbreaking was held for a new Delta Hospital in March.

**Plant Scale Model** — The scale model (1/4" = 1') of the power plant was delivered early in the year.

**Chimney and Liner Complete** — The chimney and liner were completed by the end of the year.

**SCPPA Revenue Bonds** — The Southern California Public Power Authority (SCPPA) issued \$600 million in revenue bonds and \$400 million in bond anticipation notes to obtain funds to make payments for the construction of the system.



Chimney is 710 feet high, 39 inches thick at the base, 15 inches at the top. Each ring is a single cement pour. Each pour is 7 1/2 feet tall.

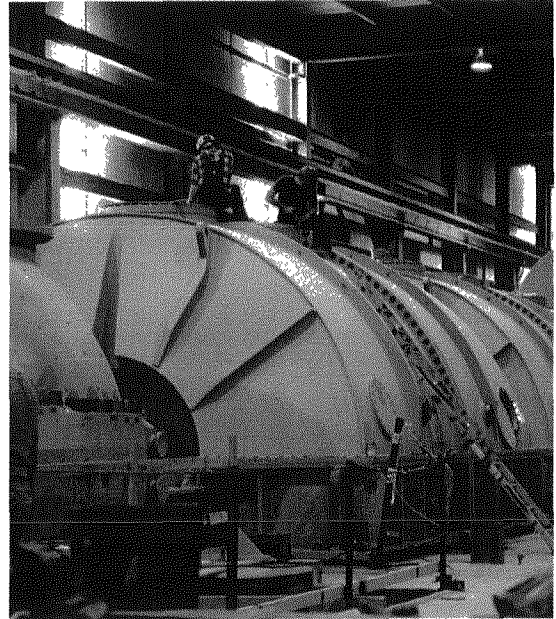


**Turbine Generator Installation** — The installation of the Turbine Generator begins.

**Water Suits Settled** — Five lawsuits over the sale of 45,000 acre feet of water to IPP were settled. The heart of the settlement was the process of monitoring the wells in the area of IPP for five years after the start of commercial operation to determine if there was any adverse impact. One new well for monitoring purposes was drilled and the USGS continued to study the groundwater.

**Dedications in Delta** — The new Delta City Municipal Building and the Delta Area Regional Park were dedicated in July.

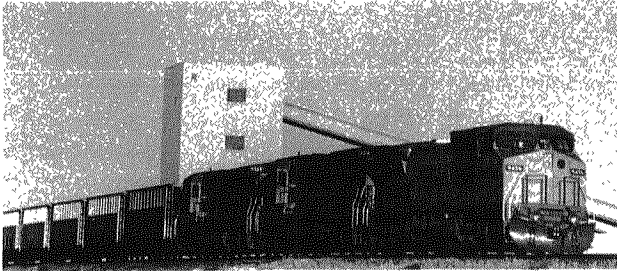
**Vocational Center Opens** — The West Central Utah Vocational Center opened for classes in August.



Construction of the turbine generator.

## 1985 — A Year of Continued Growth

### IPSC

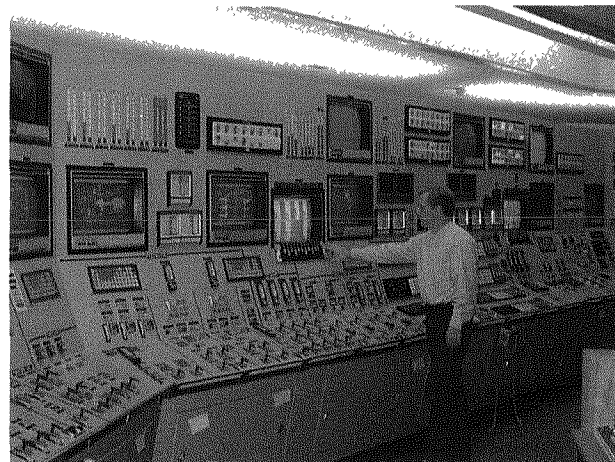


First coal delivery made in July.

**Coal Delivery** — The first coal delivery of 84 rail cars was made in July. The coal was used to test coal handling equipment.

**Simulator** — The computerized control room Simulator was delivered and installed in the Administration Building during August.

**New IPSC Department** — In August, a new Administrative Department was created to consolidate the companies administrative functions and to reduce the number of individuals reporting directly to the President and COO from eight to six. The new department, called Support Services, included the following sections: Accounting, Clerical Pool, Personnel, Purchasing, Safety, Training, and Warehouse. The Warehouse was moved back to the administrative area from the Maintenance Department as part of this reorganization. Mr. Neil H. Clay was hired as the Manager of Support Services. He was also appointed as the Corporation Secretary/Treasurer.



The Training Section used the Simulator model to train Operation employees.

**Trainees** — The sixth and seventh groups of trainees were hired.

**EAP** — An Employee Assistance Program (EAP), with Human Affairs International as the service provider, was initiated. The EAP provides short-term professional, confidential, outside counseling assistance to employees and their dependants for a wide range of personal problems. The service provider has offices in Delta, Provo, and in Salt Lake City.

The EAP provides a location and a qualified person to meet with an employee or a dependant to discuss and resolve problems such as stress, family disputes, domestic violence, marital problems, drugs, depression, and other problems.

**PSEG Home Study** — The PSEG program was organized into a home study course so employees who wanted or needed this class for advancement could take it at their own



speed. This change from an instructor/class based approach to a self-directed learn at home approach meant that any employee could take the class at his or her own pace.

**IPSC Workers Vote "No"** — A bid to organize the IPSC work force was turned down by a vote of 155 for no union, 83 for IBEW, and 36 for UMW.

**Safety Maintenance Tagging System** — With Project start-up in 1985, tagging procedures were established to ensure safety during construction, maintenance, and operation activities at IPSC. A tagging system was determined to be safer than locks, if it was enforced, and was used by all employees.

**Number of Employees** — By the end of the year, the number of employees was 459.

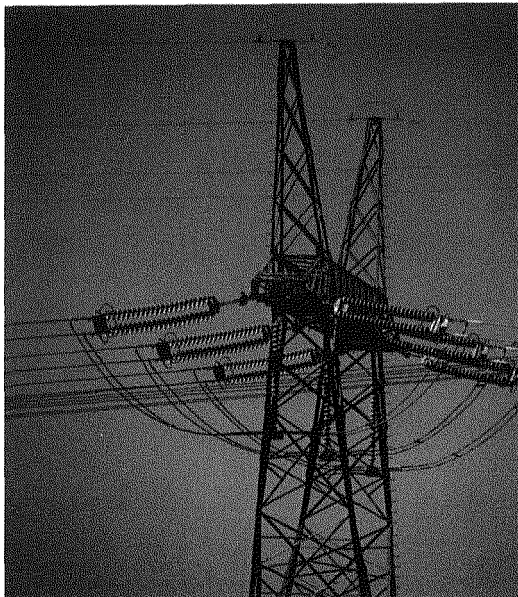
## LADWP

**Unit 1 Boiler Test** — The Unit 1 Boiler was hydro tested for leaks and chemically cleaned in August.

**Unit 1 Boiler Steam Blow** — The steam blow of the Unit 1 Boiler was completed in December.

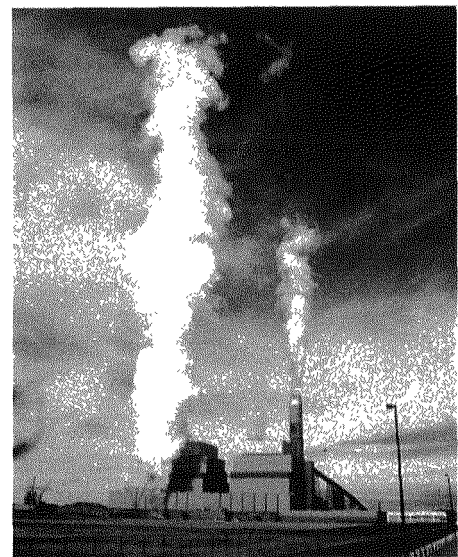
**Project Percent Complete** — Construction of the Project was considered 91 percent complete.

**Southern Transmission Line** — The 490-mile long southern transmission line from the Intermountain Power Project near Delta to Southern California was built by two contractors. One contractor worked from



Power lines connecting Southern California to the Power Plant in Delta, Utah.

Delta and the other from Southern California; they connected the transmission line at Moapa, Nevada.



Steam blow of the boiler.

## IPA

**Financing** — In January IPA began an active program to manage its outstanding debt and minimize borrowing costs, which would ultimately mean lower rates for the purchasers.

## **Other**

**EAO** — The employees of IPSC created an organization called the IPSC Employees' Activity Organization (EAO). Its purpose was to promote the social activities of the employees and employee morale. Benefits to EAO members were to include, annual summer and Christmas parties. The EAO sponsors four achievement awards to college bound students each year. When an EAO member has a death in the immediate family, a condolence plant is sent by the EAO to the employee. Other benefits will vary from time-to-time based on the need and the value of the benefit.

## 1986 — A Year of Startup

### IPSC

**Unit 1 Responsibility** — In June a major milestone was reached. IPSC was able to assume full responsibility for the first of IPP's two units. This was after nearly four years of intense training, start-up activities, and valuable on-the-job experience.

**New Department Head** — In May, Mr. Joe D. Hamblin was approved by the Board of Directors as the Superintendent of Maintenance. Mr. Hamblin replaced Richard K. Caudron, who had resigned.

**IPSC Corporate Officers and Department Heads** — IPSC Staff consisted of the following IPSC Corporate Officers and Department Heads:

S. Gale Chapman, President and Chief Operations Officer; Neil H. Clay, Secretary/Treasurer and Manager of Support Services; Robert A. Davis, Vice-President and Superintendent of Operations; Norman Mincer, Manager of Converter Station; Joe D. Hamblin, Superintendent of Maintenance; and Dennis K. Killian, Superintendent of Technical Services.



IPSC Officers and Department Heads left to right S. Gale Chapman, President; Neil H. Clay, Support Services; Robert A. Davis, Operations; Norman A. Mincer, Converter Station; Joe D. Hamblin, Maintenance; and Dennis K. Killian, Technical Services.

**RSC Dedicated** — The Railcar Service Center was dedicated on June 28. The Springville site was selected because it was midway point from the mines to the power plant. It was also in close proximity to the Union Pacific track and to the Utah Railway and Denver and Rio Grande Western interchange connections. The facility provided for crew changes, traffic coordination, and switching. In addition to eight miles of track, the facility would have its own switch engine and a large building equipped with cranes, jacks, and other necessary repair equipment. The cost to build the facility was approximately \$15 million.



Railcar Service Center, Springville, Utah.

**Hay Group Job Evaluation** — The Hay Group conducted a detailed job evaluation study, which was used for comparing IPSC jobs with jobs at comparable utilities. This was the basis for establishing pay grades for IPSC job classifications.

**Union Vote** — Workers voted 200 for a union and 179 for no union.

**Electronic Office** — Discarding of the pencil and paper pad began with the purchase of IBM Displaywriters in 1986. This electronic word processing continued to evolve with the installation of the Prime computer system. The Prime system included an electronic office automation application called OAS. It contained functions such as electronic calendaring and word processing. This operated on a Prime (9950) mini-computer system and was accessed through the terminals located at individuals' workstations. In addition to OAS, several micro-computers called Prime Producers were installed in the Clerical Pool area for the purpose of word processing. These workstations were networked together to share documents. Following OAS was a product called AFCAD. The AFCAD product became the word processor of choice as it operated from the Prime computer.

**Variable Loading System** — After the Intermountain Generating Station had some experience burning coal, the need to reduce pulverizer vibration while maintaining optimum pulverizer performance at various coal feeder speeds was identified as a major concern in need of a solution. The pulverizers ground coal using the roll-race method, a rotating table turning under three pivotally supported roll wheel assemblies. A study of methods to control wheel pressure on the table to reduce vibration and optimize performance was begun. The results of the study suggested variable pressure

on the roll wheel loading frame would achieve the desired improvements. A plan was organized which set forth a timetable and a budget for the installation of the necessary equipment.

**Boiler Mobile Platform** — During construction the decision was made to issue a contract for the construction of a powered work platform for maintenance access to the boiler furnace and superheat sections. This mobile platform could be installed in the boiler within one shift and disassembled in approximately the same time. Typical scaffold based systems required four-to-six days around-the-clock work for full access installation.

This system would be driven by four hydraulic hoists. The nominal design factors would ensure the hoist system was capable of lifting over six times the total load of both the platform and the allowable live load. Two 40-foot by 40-foot sections would be assembled for access to the front sections of the furnace. Two 8-foot by 40-foot platforms would also be used for access to the rear wall beneath the bull nose.

Prior to initial installation and operation, the manufacturer provided on-site training for both installation and disassembly.

**Predictive Maintenance** — During 1986 as Unit 1 start-up was in progress, several instruments for vibration diagnostic analysis were purchased including a spectrum analyzer, oscilloscope, and signal recorder. As rotating equipment was started up and checked out during the system start-up period, the vibration was analyzed. On several occasions problems were identified and corrected, demonstrating the value of the technology.

Concerns began to surface regarding the cooling tower gearboxes in 1986. Oil samples were obtained from the gear boxes and taken to the fuels lab for analysis. One of the lab technicians was asked to develop a testing procedure for evaluating the oil. Oil analysis practices began to be developed. This eventually led to a full-time position and the development of an in-house lab. Oil analysis allows detection of the early stages of equipment failures.

**Soot Blower Control** — The soot blowing system that was installed during construction was developed by Diamond Power. This system was called Combustion Monitoring Cleaning System or CMCS. The system provided reliable service and served the power plant very well. However, as the CMCS system aged; Diamond Power stopped manufacturing replacement parts. IPSC determined



Soot Blower Control Panel.

that the CMCS system would be viable for several more years, and that a new Diamond Power system would be purchased when it was no longer practical to maintain and support the current CMCS system with in-house repairs and parts.

**Number of Employees** — By the end of the year, the number of employees was 539.

## **LADWP**

**Operating Agent Representative** — Because of changes in Mr. Robert L. McMillen's job assignments, a new individual was appointed as the Operating Agent. Mr. Robert L. McMillen was replaced by Mr. Bruce E. Blowey as the Operating Agent Representative.

**Construction** — This year saw many construction activities reach their apex. It was the start of the process of completing the construction and preparing to turn the Project over to IPSC.

**Unit 1 First Coal Fire Complete** — The first coal fire of Unit 1 was completed in February.

**Test Energy Delivered** — The first test energy was delivered to purchasers in April.

**Unit 1 Commercially Available** — Unit 1 was completed and declared commercially available on June 10.

## **IPA**

**Unit 1 Operation** — Firm Operation of Unit I was declared on July 1. The dedication of Unit 1 was performed in September. Governor Norman H. Bangerter was invited to be the guest speaker.

**New General Manager** — W. Boyd Christensen was named as the new general manager. He replaced Ronald L. Rencher who took a job with another energy company. Mr. Christensen assumed the duties of the position in July. IPA's legal counsel, George S. Young, served as interim manager until Christensen arrived.

## **Other**

**Adelanto Dedicated** — The Adelanto Converter Station was dedicated.

**Medical and Dental Insurance** — Eventually, the size of IPSC's work force made it possible to obtain competitive bids from several insurance carriers for coverage. Blue Cross and Blue Shield of Utah was the successful bidder.

## 1987 — A Year of Additional Start-up

### IPSC

**Units Operational Responsibility** — The responsibility for operation and maintenance of Unit Two was transferred to IPSC. The Converter Station, the Railcar Service Center, and the water supply intake at the DMAD reservoir were also turned over to IPSC.

**PMA Assessment** — Power Management Associates (PMA) conducted an assessment of IPSC's operation and management of the Project. This same group would return to do additional evaluations in 1991 and 1996. A copy of PMA's 1987 Executive Summary is contained in Exhibit #6.

**Burner Thermal Redesign** — Like all other major equipment at IPSC, boiler windbox compartments received a routine inspection by Engineering Services at all scheduled outages. Inspections completed during 1987 and the next few years showed increasing levels of degradation to the burners resulting from severe thermal fatigue and creep mechanisms. Concerns had been expressed to the manufacturer, Babcock and Wilcox (B&W), regarding excessive temperatures around the inner burner sites when the corresponding mill was out of service. A change to operating procedures to keep a minimum air flow to prevent overheating was put into effect and an analysis of possible design changes was begun.

**Fire Brigade and Emergency Medical Responsibilities** — The responsibility for preparing for, and responding to fire and medical emergencies was transferred to IPSC in May of 1987. This coincided with the demobilization of the construction Manager (Bechtel) in June of 1987.

The first IPSC Fire Brigade and Emergency Medical Response Teams were made up of employees from the Operations, Maintenance, and Support Services Departments. Since then, the responsibility for the Fire Brigade has been placed under the direction of the Operations Department which provides coverage twenty-four hours a day, seven days a week.



Fire Brigade responds to the December 14, 1987 General Services Building warehouse fire.

**Computer Aided Drafting** — The first CAD software and computer system, Versa Cad was purchased. Computer aided drafting provided the ability to design, approve, and construct new projects with more speed, accuracy, and clarity.



**Predictive Maintenance** — The decision was made in early 1987 to expand the vibration analysis program. Two Vibration Technician positions were filled internally and they began to study and train on vibration analysis under the direction of the Results Engineer. Additional equipment to do routine vibration data collection was purchased and data collection routes were established. This program allowed detection of the early stages of bearing failures and loss of balance due to wear in rotating equipment. Equipment could then be scheduled for repair before more costly damage occurred.

**Audit of Payroll** — An audit team representing the Audit Committee of the IPP Coordinating Committee performed an audit of the payroll costs recorded by IPSC for the period of July 1, 1986 through March 31, 1987. During the time period of July 1, 1986 to December 31, 1986 the IPSC payroll costs were calculated and recorded at the plant site. Payroll reports were sent to the Los Angeles Department of Water and Power (LADWP) for review and to the Intermountain Power Agency (IPA) for review and physical preparation of the payroll checks. Subsequent to January 1, 1987, IPSC payroll costs were calculated and recorded at the site with payroll reports sent to LADWP and IPA for review. After the review process was completed, the payroll checks were prepared at the plant site and distributed by IPSC.

The purpose of the audit was to verify that the transfer of the payroll preparation process from IPA to IPSC was in accordance with accounting principles established by IPSC and the Operating Agent. Specifically, to verify that expenditures processed through the payroll system were properly authorized, documented, recorded, and paid. The general finding of the audit concluded that the payroll costs processed during the period of July 1, 1986 through March 31, 1987 were properly authorized, recorded, and paid.

**Audit of Other Programs** — The inventory and control systems, accounts payable system and related internal controls, and capital expenditures were also audited during the year. The results of the audits were normally very positive and in all cases the findings were present in the following manner: "The recommendations that follow are very specific in nature and are presented with the objective of enhancing and building the system and improving the accounting controls."

This approach of working together to produce a better way of doing business laid the foundation for the way records would be maintained throughout out the Project's business life.

**Number of Employees** — By the end of the year, the number of employees was 607.

## **LADWP**

**Unit 2 Turbine Roll** — The first turbine roll of Unit 2 occurred in January.



**Construction Demobilization** — The Construction Manager (Bechtel) completed demobilization of its staff in June and the Site Project Manager was demobilized in July of 1987. A small construction work force remained on site to complete deficiencies and modifications identified during construction.

**Fuels Management System** — The Fuels Management System (FMS) was implemented in Los Angeles in 1987 with computer access from personnel at the coal mines, Railcar Service Center, and the Intermountain Power Facility (IPF). The purpose of this system was to provide an efficient invoice payment and verification system, provide a consistent audit trail, and minimize fuel costs. The software was developed by Management Analysis Co. (MAC). The software was loaded on a Prime 5350 mini-computer located in Los Angeles, California. The system would be utilized by the mines, Railcar Service Center, IPF, and LADWP personnel even though many problems existed with the application. MAC went out of business, therefore making it virtually impossible to get any enhancements to the software application. Because some parts of the system worked rather well, it was determined to utilize the system for as long as it would provide the needed information.

**One-Time Bonus** — The IPSC Board of Directors authorized a one-time bonus for current employees, due to the exemplary manner in which Service employees worked to enable an earlier-than-scheduled commercial operation date.

## **IPA**

**Financing** — The gross debt service savings resulting from the refundings this fiscal year was approximately \$792 million, bringing the total to \$1,996 billion since the refunding program began. These savings, which passed directly to the ratepayer, would amount to over \$50 million annually over the life of the Project.

**Unit 2 Operation** — Unit 2 was declared in firm operation in May.

**Environmental Award** — Power Magazine presented its 1987 Environmental Protection Award to IPA for bringing the station on line and operating at high availability within emission limits. The cleaning system designers, General Electric Environmental Systems Inc., provided redundancy in each major section of the system to ensure full protection. Total particle removal has been well above the 99.75 percent designed for the system.

## Other

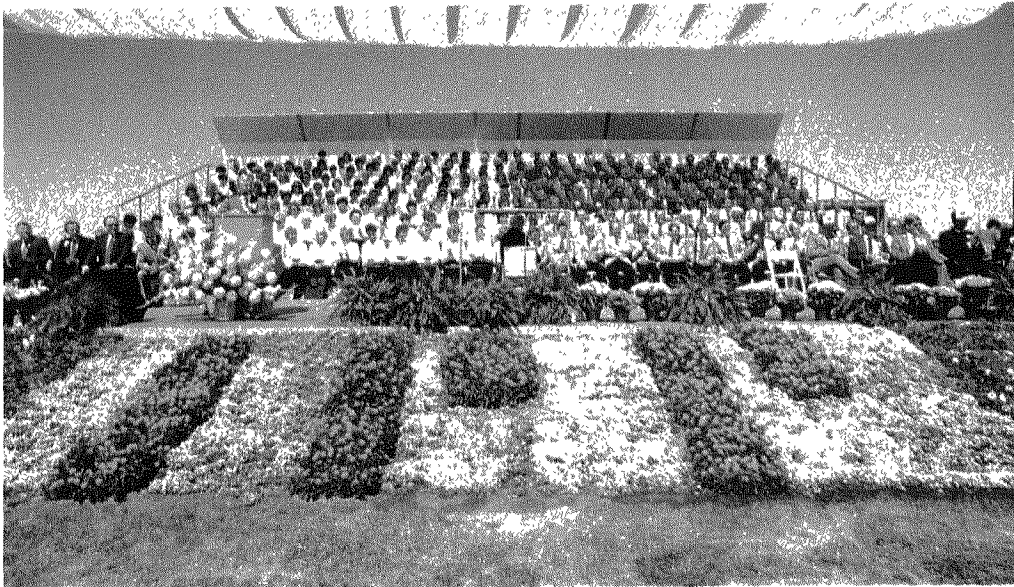
### **Project Dedication — Attracted 10,000 Guests — June 13, 1987— Dedication of Power Plant and IPP Converter Station**

Speakers were:

W. Boyd Christensen	—	General Manager, IPA
Reece D. Nielsen	—	Chairman of the Board, IPA
Norman H. Bangerter	—	Governor, state of Utah
Orrin G. Hatch	—	U.S. Senator, state of Utah
Paul H. Lane	—	General Manager, Chief Engineer, LADWP
Michael Styler	—	Chairman, Millard County Commission
James H. Anthony	—	Project Manager, LADWP
P.J. Adam	—	Black & Veatch
Thomas S. Monson	—	Second Counselor in the First Presidency of The Church of Jesus Christ of Latter-day Saints — Dedicatory Prayer

Delta High School Band — Prelude Music

The Church of Jesus Christ of Latter-day Saints Tabernacle Choir performed.



The Church of Jesus Christ of Latter-day Saints Tabernacle Choir performed several numbers at the dedication of the power plant.

U.S. Naval Reserve Color Guard, Fort Douglas, Utah — Presented Colors



Visitors who came to the power plant during the dedication were treated to a luncheon and a tour of the facility. U.S. Naval Reserve Color Guard from Fort Douglas presented the colors.

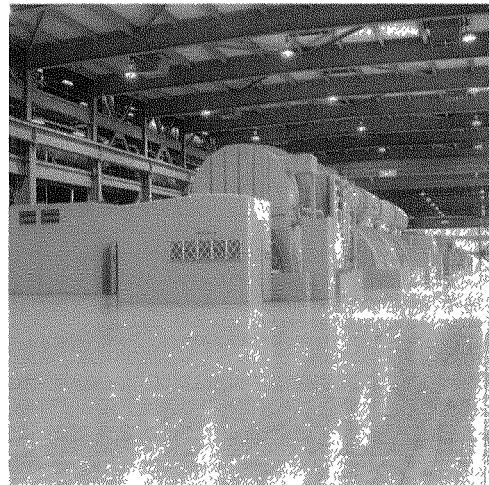
Other entertainment —	Joe Muscaolino Band	Double Take
	Saliva Sisters	Bel Aires
	Oquirrh Ridge Drifters	Wasatch Rascals

Commemorative gifts were given to employees and the public: magnetic refrigerator light bulb with "We're up and Humming" on it, flashlights, frisbees, water bottles, and visor hats.

Lunch was provided.

It is estimated that about 5000 visitors on either bus or walking tours visited the following areas: Control Room, Administration Building, Model Room, Fuels Lab, Machine Shop, Boiler, Turbine Deck, and Generator. Forty buses were used for the tours; this allowed one to leave about every ten minutes. Tour buses were provided to transport people from the Community Center to the plant site for tours. The walking tour took about one and a half hours to complete. Many of the IPSC employees served as guides for the walking and bus tours.

**Energy Cost** — The cost of energy dropped by more than half from 1983 projections as a result of favorable bond interest rates and refinancing activities by the Project.



As part of the walking tour, visitors were able to see the turbine deck.

## 1988 — A Year of New Programs

### IPSC

**Production Incentive Program** — In this year, the Operating Agent implemented a Production Incentive Program. The Production Incentive Program provides encouragement and reward for superior performance while providing an overall economic benefit to the Project. The Operating Agent, in conjunction with IPSC Management, sets performance goals on an annual basis. A production incentive is paid as a percent of base salary and every employee receives the same percentage. The scale slides between 0 and 5 percent, depending on the achievement level. The program focuses on five areas essential to plant operation. These five key points are: Safety, Environment, Production, Maintenance, and Budget. The Production Incentive Program determines appropriate and quantifiable performance measures for each goal. The minimum and maximum achievement levels for each measure are then defined. The minimum performance levels are, in most cases, significantly above industry average and government mandated performance levels. Each measure is weighted as a percentage of the total bonus based on the importance of that particular goal and measure. The goals, performance measures, and weightings are reviewed and adjusted annually to emphasize the need for continued improvement in all areas of the organization. The Production Incentive Award earned this first year was 3.28 percent of annual base wages.

**Wellness Program** — In August, a Health Analyst was hired to develop and implement a "Wellness Program." The concept of the Wellness Program was to provide a resource for physical fitness for all employees, education for the dependants of all employees, and rehabilitation and work hardening for those employees who are injured or have an accident at the work site. Additionally, the Wellness Program ties related functions together to help produce a process with a goal of reducing or controlling medical costs, not for just the employee, but for all dependants.

Several reports have identified that the majority of medical insurance costs are generated by an employee's dependents and spouse, rather than the employee. The Wellness Program brings focus to the total picture of health care for all employees, spouses, and dependents. It gives a measurable result in terms of attendance at work, increases or decreases in insurance rates, number of workers compensation claims, and length of time off work. The amount of money saved through offering recovery physical therapy at the plant instead of employees driving to town and using our medical insurance to pay someone else to perform the therapy was significant.

**Technical School PSEG Program** — In September, the PSEG program was turned over to the local technical school (post-high school training) to develop a training course that area residents could enroll in if they desired to be considered for employment at the power plant. The course originally required 18 months to complete; this was later

reduced to 13 months. The cost for each student was about \$1,100 in fees and books. The cooperation between IPSC and the technical school was a very good example of business and the local community working toward a common goal. The demand for enrollment was more than anyone expected. A waiting list of about 30 to 50 candidates existed long before a class could be scheduled. Four (4) groups of students graduated from the course. The only promise made was a courtesy interview with IPSC. This project provided a way for many adults to take the course at night and keep their current job. It also created a pool of quality candidates from which IPSC could select new hires who were able to start the job with knowledge of how a power plant is run and the work that would be expected of them.

**Condenser Tube Replacement** — Due to incorrect matching of condenser tube material to the Sevier River water chemistry, the condenser tubes in Unit 1 were pitting and developing "pin hole" leaks. Titanium Metals Corporation of America was hired to replace the copper-nickel tubes with titanium tubes at a cost of \$3.45 million.

**Computerized Maintenance Management System** — IPSC opted, because of in-house programming, systems analysis expertise, and our control of the source code, to discontinue this service through TSW.

**Document Storage at IPSC** — In 1988 a project to develop an integrated corporate records management program was initiated. With an initial allocation of \$320,000, a consultant was hired to survey IPSC's records management needs and determine the feasibility of utilizing optical disk technology.

**Electronic Office** — WordPerfect, as word processing software, had established itself as the dominant office application and was implemented for use at IPSC in 1988. WordPerfect became the choice of word processors due to its wide acceptance in the user market and its more advanced features. WordPerfect was implemented through the PC network to all users. WordPerfect Office, a calendar, and scheduling program that worked in harmony with WordPerfect word processing was also marketed and purchased and marked the beginning of IPSC's GroupWise system.

**Predictive Maintenance** — To better monitor the condition in electrical equipment, an infrared scanning camera was purchased. Interest began when Babcock and Wilcox was on site to deal with boiler issues and brought along a camera to do scanning. While here, the operator pointed out several electrical problems he had found in his spare time. An Infrared scanning service was brought in to scan major electrical equipment. This proved valuable in finding several problems, but the service was expensive. Our own equipment was purchased and the scanning program began.

**Audit of Payroll** — An audit team representing the Audit Committee of the IPP Coordinating Committee performed an audit of the payroll costs recorded by IPSC for

the period of July 1, 1987 through June 30, 1988. The audit covered gross wages of approximately \$22,246,000 that were paid during the fiscal year.

The audit concluded, except for several findings, that the payroll cost processes during the period of July 1, 1987 to June 30, 1988, were properly authorized, recorded, and paid. The audit findings recommended that payroll taxes and employee benefits charges be distributed to each functional department on a basis related to payroll in conformance with the Federal Energy Regulatory Commission (FERC) Uniform System of Accounts. These recommendations were implemented following the audit.

**Number of Employees** — By the end of year, the number of employees was 608; the highest number of employees, 617, was recorded in the month of August.

## LADWP

**Locomotive Engine** — The combined efforts of the Department of Water and Power and IPSC were used to acquire and relocate a railroad locomotive engine from Ely, Nevada to Delta, Utah. As part of the Department's plan to eventually build a power plant near Ely, Nevada, they purchased the railway that had been used by Kennecott to move ore from its copper mine to Ely. The railcars moved about seven miles one way. When the line was no longer used, the engine was stored. It had been well maintained. This locomotive was to be used at the power plant to move railcars.



Engine used at power plant to move coal cars, especially useful during winter months to reposition frozen cars.

It was anticipated it would be particularly helpful in the winter months when frozen cars of coal have to be repositioned at the plant site.

## IPA

**Financing** — After an aggressive refunding program, the average borrowing cost for the Project was reduced to 8.57 percent. This was a remarkable effort that came about

because of constant attention to the market and a creative approach in issuing securities.

## Other

**Sale of Construction Worker Housing** — Other business this year included the sale of some of the construction worker housing units at the IPP site and all of the 240 White Sage apartments in Delta, Utah. The



White Sage apartments in the background were sold. The White Sage Subdivision remained.

The buildings at both locations were removed. The water tower and sign are the last reminders of the White Sage Apartments, which was home for hundreds of families. South of the White Sage area, adjacent to the ball field, the county fairground complex neared completion. The land for the fairgrounds was made available to the county by IPA, and water for the facilities was donated as well. The last vestiges of the construction phase of IPP were disappearing and the Project was becoming an accustomed part of the landscape.

**Sodium Cyanide Spill on I-15 Closed the Freeway** — On Thursday morning, July 28, a sodium cyanide spill on I-15 closed the freeway between Kanosh and Scipio. Eighty 245-pound drums rolled off a flatbed truck scattering enough cyanide to kill the residents of Utah several times over. The Millard County Sheriff requested the use of IPSC's clean-up equipment because the equipment at the scene was inefficient. Two volunteers were sent with the guzzler truck and four others went to help as needed. They wore rubber suits in 100 degree weather for almost three days. Before they were done, another call for help was received. In the final stages of the neutralizing process, they ran out of sodium hypochlorite. The supplier, Great Western Chemical, had run out. IPSC sent 40 barrels to complete the job. Millard County Sheriff Ed Phillips, speaking to IPSC, said; "Words cannot express my gratitude to you and your employees for the support we received during this entire effort. It is very gratifying to know these resources are available with little or no questions in a time of need. Please pass this word of thanks to all those involved."

Millard County presented an award of appreciation to IPSC for help and expertise in the clean up of the cyanide spill.

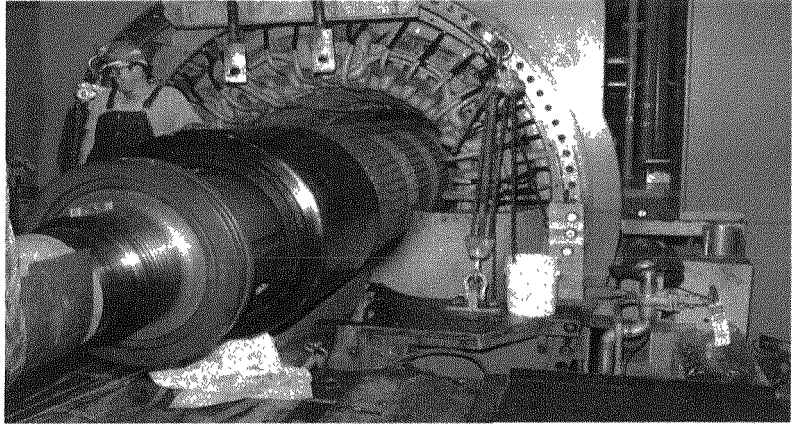


# 1989 — A Year of Accomplishments

## IPSC

**Production Incentive Program** — IPSC employees earned 60.67 percent of targeted goals for an award of 3.03 percent of their annual base wages.

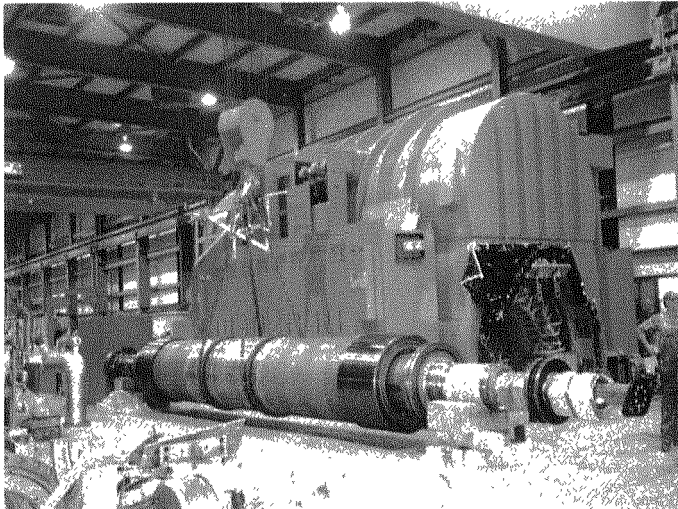
**Turbine Inspection** — The first scheduled outages for turbine-generator warranty inspections of both units were completed this year. During the 10-week outages on each unit, the turbine generators were completely disassembled, inspected, and repaired where necessary.



Turbine generator disassembled for inspection and repairs.

The outage work went exceptionally well and was completed ahead of schedule.

Equivalent availability of the two generating units for the year was 79.44 percent, despite the outages. The capacity factor was 74.6 percent. After the outages were completed, the units' availability and capacity factors returned immediately to over 90 percent.



Repair of turbine generator.

The Intermountain Converter Station achieved 99.6 percent availability and the Railcar Service Center availability reached 100 percent.

**Contract for Railcar Service** — IPSC contracted to service the railcars of Sierra Pacific.

**Medical Distribution** — From the time the first employee was hired, the need for medical insurance was a constant concern. As the need to hire and train a work force to operate the power plant got under way in early 1983, the ability to attract the quality of employees needed was dependent on the ability to offer competitive wages and benefits. Among the benefits was a medical and dental insurance plan. In the first few years the challenge of escalating costs for the medical and dental plan caused annual headaches. Because the plan was growing and medical inflation was running at near



record levels, the cost was increasing dramatically each year. Plan changes in design and level of benefits were reviewed each year to determine if reductions would be necessary. The need to keep competitive benefits and provide the work force with a viable medical and dental plan, keeping costs within budget limits, was proving to be a challenge.

One design change was the implementation of the medical distribution. IPSC had self-insured the medical and dental plans. IPSC purchased reinsurance to provide protection against high claims on both an individual and aggregate basis. At each renewal the carrier based the future liability limits on the history of previous claims. In 1989 IPSC implemented the medical distribution to limit our increases and help employees develop a sense of ownership in the plan. The formula for the medical distribution was developed so that if individuals were prudent in their health care usage they could receive part of the savings the company realized from fewer claims being submitted.

**Community Center** — In June, the administration of the contract for the operation of the Community Center was transferred from DWP to IPSC. The contract with the Ogden/Burtco Company required them to operate the facility under the direction of the Contract Administrator. IPSC chose to have the Health Analyst, located at the Community Center, to serve as the day-to-day contact for IPSC.

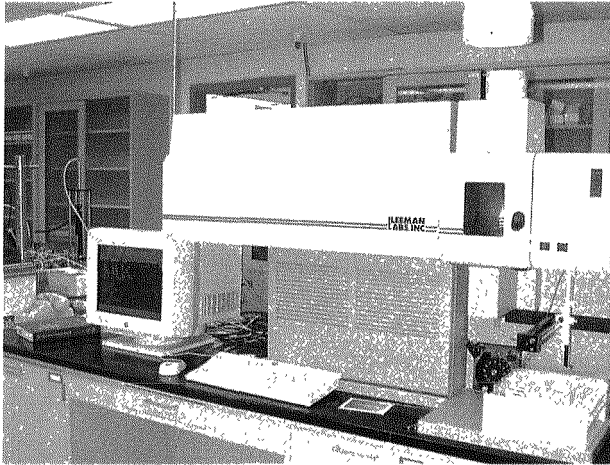
**Environmental** — A substantial investment in pollution control equipment during the construction of the Intermountain Power Project resulted in emission levels well below the standards proposed by new federal clean air legislation. The current bill required, for example, that sulfur dioxide emissions of power plants be reduced to 1.2 pounds per million BTU. IPP's present emission level was .07 pounds, only 1/16 of that requirement. After 1995 there would be 107 U.S. power plants emitting greater than 2.5 pounds of sulfur dioxide per million BTU. IPP's use of wet scrubbers and low sulfur coal was responsible for its low emission levels.

IPP's nitrogen oxide emissions also fell well below required levels. Those emissions were controlled by burner technology.

Sulfur dioxide and particulate removal from combustion gases were 90 percent and 99.75 percent respectively. Continuous emission monitoring equipment was built into the air quality control systems, and reports are submitted to the Utah Bureau of Air Quality regularly.

**Condenser Tube Replacement** — In the first quarter of the year, Unit 2 nickel-copper condenser tubes were replaced with titanium tubes by Titanium Metals Corporation of America at a cost of \$3.45 million.

**Predictive Maintenance** — In 1989, the Plant Manager spoke to the Engineering Group in Technical Services. His address dealt mainly with company goals, strategy, and management philosophies. During the question and answer session that followed, he assigned the Engineering Group to work with Operations and Maintenance to develop our condition-based equipment monitoring technology into a single program. This program was to become an integrated part of the corporate goals and the management philosophies. A few months later, the Engineering Group made a presentation to the Plant Manager and Department Heads as to how the program would function and be administered. At that time, the united program was adopted by management. The program would be the responsibility of the Maintenance



Lube Oil Analyzer.

Department. Operations, Maintenance, and

Technical Services would coordinate their efforts in administering the program. It would be run by three working groups, each chaired by an Assistant Superintendent of Maintenance, who would work with equipment according to areas of responsibilities. The program's development would be overseen by a coordinating committee, chaired by the Maintenance Assistant Superintendent over Planning. The coordinating committee was overseen by a steering committee chaired by the Maintenance Superintendent.



Vibration Monitoring Equipment.

The following monitoring techniques would be further developed:

- |                       |                        |
|-----------------------|------------------------|
| 1. Thermograph        | 4. Visual Inspections  |
| 2. Vibration Analysis | 5. Performance Testing |
| 3. Oil Analysis       |                        |

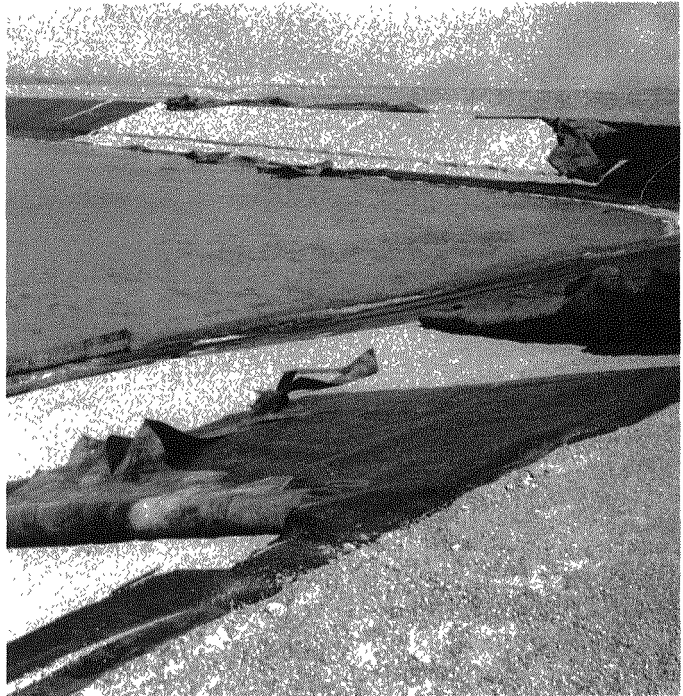
**Audit of Payroll** — An audit team representing the Audit Committee of the IPP Coordinating Committee performed an audit of the payroll costs recorded by IPSC for the period of July 1, 1988 through June 30, 1989. The audit covered gross wages of approximately \$23,326,658 that were paid during the fiscal year.

The audit concluded that the payroll cost processes during the period of July 1, 1988 to June 30, 1989, were properly authorized, recorded, and paid.

**Number of Employees** — By the end of the year, the number of employees was 607.

## LADWP

**Pond Liner Repairs** — Personnel from DWP worked with IPSC, manufacturer's representatives, and consultants to resolve the problems with the pond liners. Some of the polyethylene liners ripped apart during the winter months. This was caused by a lack of provision for material contraction during cold weather. The bottom ash and evaporation ponds were the areas most damaged. The cost of repair was well over \$1 million.



Looking northwest from Unit 2 Boiler are ponds used for waste water evaporation.

## IPA

**Financing** — Continued aggressive fund management further reduced the average borrowing cost for the Project from last year's 8.57 percent to this year's 8.26 percent. The investment portfolio earned \$92,715,000 during the past fiscal year.

June 30, the current weighted average borrowing cost was 8.26 percent.

**New General Manager** — On September 29, Reed T. Searle was named the new general manager of the Intermountain Power Agency replacing Boyd Christensen.

## 1990 — A Year of Changes

### IPSC

**Production Incentive Program** — IPSC employees earned 84 percent of targeted goals for an award of 4.20 percent of their annual base wages.

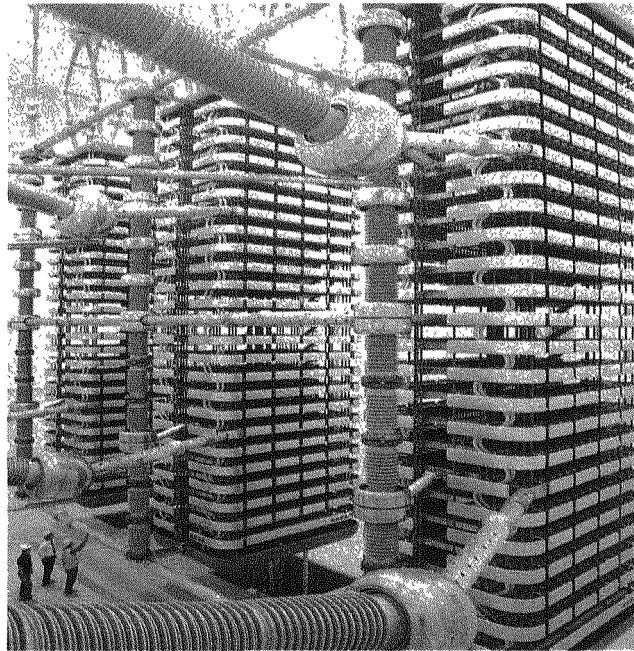
**Safety and Training** — In August, the Safety and Training Sections were combined and the Safety and Training Manager was moved to the Assistant Superintendent level.

**Clips Removed at Converter Station** — Over 120,000 plastic clips were removed from electronic circuitry in the Converter Station. The small clips were originally placed over wire connectors to protect workers' hands during installation of capacitors. They were located throughout the three-quad valves in both valve halls. Workers from Wasatch Electric, under the direction of ASEA Brown Boveri, completed the job. After the task was finished, Converter Station personnel tested each of the 3,456 thyristor valves individually to make certain none of the delicate wire connectors were damaged.

The necessity of removing the clips was brought into focus due to a fire which destroyed an 800 megawatt converter valve hall in Rehin Delhi, India. It was determined that one or more of the clips had been misplaced to the side of the wire connectors, causing arcing and an eventual fire within one of the thyristor positions. Even so, the fire may have been prevented if the valve hall design had been different. In the Rehin station, each thyristor position was covered with a fiber glass dome. The dome in effect captured the heat, causing other component parts of the capacitor to ignite and eventually destroy the entire valve hall.

As workers at the Intermountain Converter Station began the removal process, they also discovered evidence of a fire next to a misplaced clip. Unlike the Rehin design however, the thyristor positions at IPP are uncovered.

This allowed for the heat to dissipate before any major damage could occur and for the fire to extinguish itself.



Converter Station Valve Hall.

The Rehin incident was one of two major converter station fires world-wide within three years. The other was in Itaipu, Brazil, where a valve hall burned completely to the ground leaving no semblance of any recognizable station parts.

As a result of the fires, ASEA Brown Boveri, the world leader in converter station construction, issued an international dictum to remove all clips in all stations and all fiberglass dome thyristor coverings. This precipitated the tedious removal process at the Intermountain Converter Facility.

**Air Monitoring** — A four-year ambient air quality monitoring program was completed at the site in Delta. The program, required by the Utah Bureau of Air Quality, measured ground level concentration of pollutants at sites surrounding the generating facility. The program concluded that the impact of IPP pollutants upon the surrounding environment was so small as to be insignificant.

**Maintenance Effectiveness** — A new maintenance effectiveness program was implemented at the Intermountain Generating Station. The program was designed to provide a method for accurately measuring and analyzing the productivity of the Maintenance Department and to identify and correct problems.

The program consisted of four components: Work orders with standard times assigned, maintenance performance data, maintenance performance reporting, and indices review and productivity improvement.

Standard times were established for all types of maintenance work. Providing maintenance workers with standard time for each job would not only help measure productivity, but increase it.

A list of seven indices were developed to monitor and analyze the performance of each maintenance crew. These indices were as follows: Performance, Utilization, Coverage, Effectiveness, Turnover (backlog), Emergency, and Schedule Compliance. An activity report would be prepared monthly so the performance of each crew could be evaluated and compared over a period of time.

The new "Monthly Maintenance Indices Report" also included: Maintenance costs per kilowatt hour, sick leave, cost per railcar mile, budget summary report, and budget cost account detail report.

**First Retiree** — On March 30, 1990, Bill Mundy was the first employee to retire from IPSC.

**Safety Maintenance Tagging System** — A computerized tagging system was purchased from the General Physics Corporation and implemented. This system was

installed to automate the generation of tagging documentation and to provide a computerized check for safety conflicts.

**Baghouse Modifications** — The baghouses in both units began to show a rise in differential pressure during 1990. This pressure eventually reached a point where the cleaning cycles had very little effect. Because of this problem, an investigation to replace the bags began.

A study was also performed at the same time into other options that could resolve this high differential pressure. The research showed that sonic air horns could be installed and significantly reduce this.

**Burner Thermal Redesign** — By 1990, degradation of burner assemblies on Unit 1 had advanced to a point of inoperability on many burners, requiring hundreds of man-hours each outage just to bring the deformed burners to a minimal state of operability. Following the outages of 1990, redesign efforts began in earnest to evaluate boiler operational parameters, and to match a burner design with these parameters to achieve the required burner thermal resistance and design life.

With the assistance of RJM, Inc., a combustion design consultant, a burner design task force was established with IPSC and B&W, Inc. The resulting design included innovations for allowing thermal growth in the burner backplate, a serious weakness identified in the earlier burner design. Provisions were made to allow outer air register balancing with field installed banding. Additionally, air flow studies revealed the need to install air flow stabilizers at the exit of the inner air zones to ensure more stable combustion profiles and help protect vulnerable burner components.

Short of complete register replacement, many of the same corrections were made on the Unit 2 Burners. Unit 2 Burners were experiencing the same problems as Unit 1, but were at a less advanced state of degradation. With the improvements later made on Unit 2 Burners, Unit 2 performed satisfactorily. Replacement of Unit 2 Burners, based on current inspections, was still several years in the future.

Burner integrity and operability, especially on Unit 1, stabilized. Only a minor amount of repair would typically be required each outage to maintain these burners in good condition.

An average of four-to-six stabilizers would be replaced on each unit, during each major outage. IPSC developed an in-house design for these stabilizers using more durable, but less expensive, metal incorporating rare earth additives.

**Combustion Reheat Disposal System** — Due to concerns with the increasing maintenance costs of replacing the scrubber module combustion gas reheat bundles, compounded with the negative impact this system had on plant heat rate, a recommendation was submitted to convert to a wet stack operation. Initial design of the

plant was for the combustion gas from the boiler to be filtered by the baghouse to remove particulate and then sent to the scrubber modules to remove SO<sub>2</sub>. After scrubbing the combustion gas, reheat bundles heated the gas back up to 170 degrees F. (later changed to 135 F.) for plume abatement. Since initial design of the plant, the EPA had revised its thinking on upper atmosphere release of stack gases which allowed for a change to our design. Removal of the Combustion Gas Reheat System (CGR), does not affect the removal efficiency of 90 percent of the SO<sub>2</sub>, nor does it impact the sulfur dioxide emission limit of 0.150 lb/MBTU.

The design change was to modify the stack and duct work to handle wet combustion gas conditions. This meant providing a liquid collection and drain system, which was designed by LADWP. Additional modifications were required for the relocation of the Continuous Emissions Monitoring System (CEMS). The advantages of this modification meant that the CGR system could be eliminated. The carbon steel CGR tube bundles had a fairly short life span which meant frequent failures and downtime. The hot water provided for reheating came from the deaerator of the feedwater system. Without this demand for hot water, the furnace didn't have to fire as hard, saving fuel. Additionally, the hot water that returned to the deaerator or condenser for reuse was high in iron content which was causing water chemistry problems. Additional advantages included elimination of the sootblowing system which kept the CGR tube bundles clean. This again reduced steam and fuel usage. Induced draft fan horsepower was also reduced because of elimination of the pressure drop created by the CGR bundles. An additional benefit also included the annual operation and maintenance expense for the CGR system.

The estimated total net present worth savings for this modification over 28 years for both units amounted to \$28,750,000. The cost of the modifications were budgeted at \$1,600,000. The modifications were installed in 1994.

**Predictive Maintenance** — By mid year it became clear that there was a problem with the program coordination. It was decided to roll the working groups and the coordinating committee into one group.

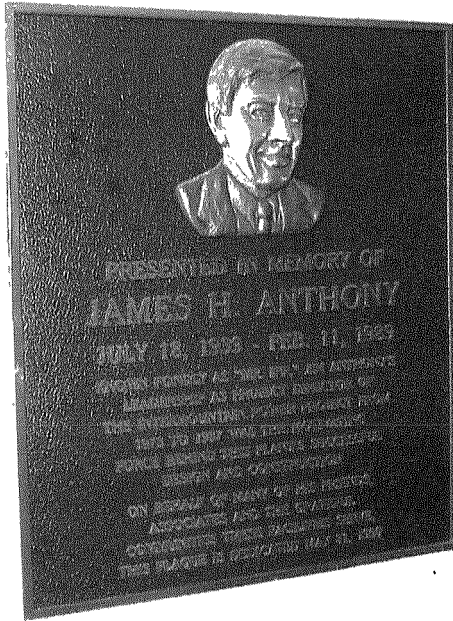
The coordination responsibilities were delegated to a maintenance engineer. This person then chaired the revised working group.

Ferrograph equipment was purchased for oil analysis. From this IPSC gained the ability to judge equipment conditions from the shape and look of wear particles in the oil.

**Number of Employees** — By the end of the year, the number of employees was 608.



## LADWP



In honor of James H. Anthony a plaque was placed in the foyer of the Administration Building.

**James H. Anthony Plaque** — In May, the participants gathered at the IPP site in Delta to pay tribute to James H. Anthony, who had died of cancer the previous year. Mr. Anthony was Project Director from 1973 to 1989 and the motivating force behind the successful design and construction of the Project. A plaque in his honor was placed in the foyer of the IPSC Administration Building.

**Exhibit Center** — During construction one of the most utilized visual aids was the scale model of the power plant. Contractors and vendors were able to see how their work was to be done and what the end product was to look like. At the conclusion of

construction, the model room and some of the more significant parts of the scale model were used to create the Exhibit Center.

A series of television monitors present how this plant was planned, constructed, and how it operates. Following the television monitors and using the scale model as a visual aid the audience could see how a modern coal-fired power plant makes and sends electricity to the various consumers. The pace at which a group wanted to move through the exhibit could be accommodated to meet the needs and desires of the group.



Visitors walking through the new Exhibit Center.

The exhibit center would be used to educate hundreds of elementary school children on how a power plant works, as well as adults and numerous visitors both locally and from foreign countries. The plan for the exhibit center had an option that allowed for a self-guided tour for impromptu visitors. The center would also be a viable alternative to those individuals with special needs who would find a two-hour walking tour of the plant more than they could endure. In approximately 30 minutes, the center offered a complete power plant tour in a controlled environment.

## **IPA**

**Financing** — After twenty-three refunding issues, the borrowing cost for the Project was reduced from 11.31 percent at the end of the initial financing period to 8.26 percent.

## **Other**

**Service Award** — The Association of American Railroads (AAR) presented an award to the Railcar Service Center for outstanding repair service.

## 1991 — A Year of Comparison

### IPSC

**Production Incentive Program** — IPSC employees earned 86 percent of targeted goals, for an award of 4.3 percent of their annual base wage which was higher than last year's award.

**PMA Assessment** — Power Management Associates (PMA) conducted an assessment of IPSC's operation and management of the Project. This same group would return to do an additional evaluation in 1996. A copy of PMA's 1991 Executive Summary is contained in Exhibit #7.

**Community Center** — In May the contract with Ogden/Burtco was dropped. The new contract for the operation of the community center was signed with ABC Services.

**Maintenance Effectiveness** — The "Monthly Maintenance Indices Report" was expanded to include cost center list of high-cost items.

**Document Storage at IPSC** — By 1991 a master plan had been developed to meet the needs of records management at IPSC. A Records Retention Schedule (PAI #77) was developed and records management policies were adopted. The plan was developed utilizing electronic imaging technology and optical storage as the backbone of the system. Implementation would begin in 1992.

**Baghouse Modifications** — A test system was installed during 1991 and the sonic horns were shown to be effective in reducing pressure drop.

**Burner Thermal Redesign** — Following the changes and modifications suggested from the 1990 in-depth analysis, the necessary hardware was installed on Unit 1. Since these modifications, Unit 1 Burner hardware integrity has met all expectations. In addition, testing of burner operating parameters resulted in improved combustion and air flow distribution.

**Turbine Hydraulic Coupling** — General Electric and IPSC engineers, following the 1991 fall turbine outage, concluded turbine pedestal shifts due to uneven temperature differential across the pedestal would negatively effect future turbine rotor alignments. Faced with the threat of delayed outages caused by extended turbine rotor alignments, IPSC engineers investigated hydraulic coupling bolts as a quicker, yet equally reliable substitute to standard coupling bolts. The hydraulic coupling bolt is designed to be slightly more forgiving in the fit tolerances and permit a quicker assembly.

This arrangement sped the coupling and alignment process by moving the time intensive work of precision machining the bore and sleeves earlier in the outage and not at the end when any delay would have a direct impact on the unit returning to service.

**ID Fan Transformer Failures, Evaluation, and Replacement** — The Induced Draft (ID) fans are driven by synchronous motors powered by variable frequency drives. There are eight variable frequency drives in each unit to drive the four ID fans. Each variable frequency drive is connected to 6900 volt switchgear through isolation transformers to provide harmonic isolation and to provide proper voltage levels to the drives.

The Unit 1 B2 Isolation Transformer failed when one of the low-voltage leads shorted to the transformer core. An inspection of the remaining 15 transformers showed excessive heating was occurring in all of the transformers. The abnormally high temperatures in the transformers caused the varnish on the core steel to burn off and damaged the paper insulation on the leads. The damage to the lead insulation on the B2 Transformer caused the lead to fail and resulted in the loss of the entire transformer.

The transformer operating performance was analyzed and it was determined the heat was being caused by high harmonic levels in the transformer core steel. New design specifications were prepared for the replacement transformer which required the core steel to be able to handle higher levels of harmonics without overheating. The replacement transformers operated at a significantly lower temperature than the original transformers. In addition, the room HVAC System was modified to increase the heat removal from the original transformers to prolong their life.

**Predictive Maintenance** — In 1991, monthly performance testing began on both units. The data would be used to trend and determine degradation of the turbine cycle, and to determine problems with cycle isolation. The steam generation side was also reviewed for problems. Performance testing would enable equipment to be scheduled for reconditioning when needed, instead of at specific time intervals.

**Pulverizer Rotation Throat** — Pulverizer maintenance cost reductions and performance benefits were the most common gains reported by generating stations having mills with rotating throats.

Due to the internal configuration, the air flow distributions around stationary throat rings could vary by as much as 25 percent. Accelerated wear and localized erosion on the throat and housing are often found on the stationary throats, especially in throats adjacent to and behind the roll wheel assemblies.

The aerodynamics of the rotating throat promotes more uniform air flow, thus minimizing the erosive wear in the low velocity throat ports and in the high velocity housing zones. In addition, wear is further reduced by the use of erosion resistant materials.

Anticipating the benefits of the rotating throat design, IPSC began to test rotating throats designed by various vendors. The Babcock and Wilcox design proved to be the most promising with higher gradation, better mechanical reliability, and extended service life. However, throat performance seemed to be more sensitive to fuel that had high rock content. Increasing the primary air duct pressure when there would be a high amount of rock in the coal helped maintain pulverizer reliability. Evaluation continued on the throat pros and cons to ensure optimum operation, performance, and maintenance savings.

**Water Suits Settled** — During the high water runoff in 1983 and 1984, a small portion of land was flooded above the legal storage easements at the Sevier Bridge Reservoir. Twenty-five individuals who owned land which was flooded sued all parties involved with the reservoir including IPA. A settlement was reached with all of the plaintiffs, except one.

**Number of Employees** — By the end of the year, the number of employees was 605.

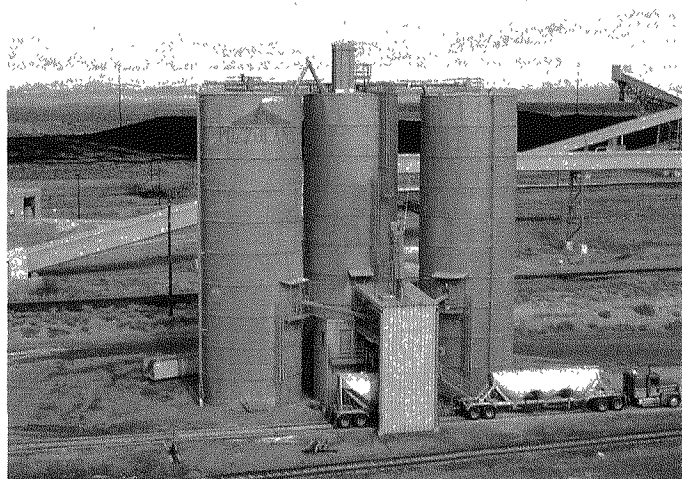
## IPA

**Financing** — June 30, the current weighted average borrowing cost was 8.05 percent.

**IPA Acquires 50 Percent Interest in Crandall Canyon Project** — In the summer of 1991, IPA became Nevada Power's co-owner in the Crandall Canyon Project. Under the terms of this acquisition, IPA can take varying amounts of coal from the Crandall Canyon Mine (also known as the Genwal Mine) at prices based on the actual cost of production. This low-cost supply was intended to give IPA a producer's view of the coal markets, useful in dealing with other coal producers in contract negotiations and spot market purchases.

## Other

**Pozzolanic on Site** — A contract with Pozzolanic International was signed for the purchase of flyash. They would purchase most, and maybe all, of the flyash that met the quality requirement for an additive in cement. IPSC was producing about 325,000 tons annually of which about half met quality requirements. Pozzolanic built their own classifying, storage, and load facilities near the Sludge Conditioning Building.



Pozzolanic flyash loading area.

## 1992 — A Year of Improvements

### IPSC

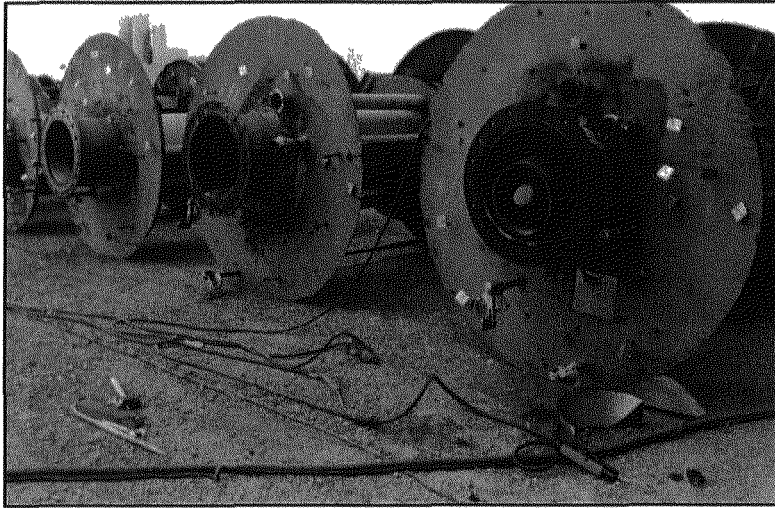
**Production Incentive Program** — This past year IPSC employees earned 86 percent of targeted goals for an award of 4.3 percent of their annual base wage.

**Reduced Positions — Because of Training** — Employee training continued to be an ongoing effort at IPSC. We restructured the training considerably, and as a result, reduced budgeted positions from 618 to 609. Employees became much more proficient and reached a level of training that allowed them to perform their jobs with minimal support.

**Training by Computer** — A software program called "Pinnacle" was purchased to support the expanding need for training and, at the same time, keep the time and costs to a minimum. In the Pinnacle program, a training technician would enter text and information. The program could then be used to generate a training module with questions and a final exam for a specific subject. The module was then placed on the local area network and used as a training session for employees by using a video terminal. This approach proved to be very effective and the retention of the information taught to the employees was shown to be as high, if not higher, than traditional classroom instruction.

**Tracking Employee Training** — A new tracking program that makes a training record of the classes taken on the "Pinnacle" system was placed in operation. This created a computer record of all training given to an employee. The tie to the Pinnacle system eliminated the need to have someone transcribe the information to maintain a paper file. It also would allow an employee to use the computer to review their training file. Supervisors would be able to manage their responsibilities and ensure employees remained current with required training. It also allowed the supervisor to review the training or retraining required for the upcoming year.

**Optical Imaging System Installed** — In July an Optical Imaging System was purchased as part of IPSC's Records Management System. This system allowed electronic document creation, imaging, and routing of documents. A Work Flow Analysis Group recommended and implemented major efficiency improvements in the work flow between Purchasing, Warehouse, Receiving, and Accounting. This resulted in the reduction of five clerical positions.



Burners for Unit 1.

**Burner Replacement —** In April most of the Unit 1 burners were replaced with new Babcock & Wilcox burners.

**Maintenance Effectiveness —** The "Monthly Maintenance Indices Report" was expanded to include over budget accounts, equipment with repeated breakdowns report, and equipment with breakdowns occurring after preventative maintenance was performed.

**Plant Information System —** The Plant Information (PI) system was implemented in several steps. The first equipment arrived in late 1992. The first phase, a joint project between IPSC and LADWP, was implemented as a Project Modification (PM 276) using left-over construction money. Initially the goal was to replace the Modvue computers in the scrubbers which were unreliable and did not collect history. The project was expanded to gather data from Modicon PLCs in lime preparation, sludge conditioning, and water treatment as well as the scrubbers. Because of the historical and display capabilities of the PI software, a second phase was planned to gather data from the power block areas of Unit 1 and Unit 2.

**Site Storm Water Runoff Modifications —** The Environmental Protection Agency (EPA) implemented some regulations they had been working on for several years regarding storm water runoff from industrial sites. These new regulations made it necessary for industrial sites to either contain the storm runoff, or obtain a permit to allow the storm water to runoff under specified conditions. The permit required that extensive monitoring and record keeping be maintained so the EPA could determine if the permit holder was discharging more than allowed. This information could also be used to determine if the permit holder was causing change to the environment.

The Intermountain Power Project (IPP) site was studied and evaluated very carefully. It was determined that with some modifications the site drainage system could be modified to contain all storm runoff on site. This action eliminated the requirement to obtain a discharge permit. The main step in this process was to construct a storm water ditch from the Brush Wellman Road back to the Waste Water Holding Basin.

This ditch, with its associated pumping stations, was constructed in the summer of 1992. With this ditch in place, no storm runoff coming from the industrial activity area on site could leave the IPP site. This meant one less government permit to maintain.



The Intermountain Railcar Facility in Springville, Utah was subject to the same regulations regarding storm water runoff. However, there was no way to keep the storm water from leaving that site. An application for discharge of storm water was filed with the state. The permit was issued for storm water discharge by the state of Utah. Some of the conditions of the permit required monitoring of storm intensity, measuring rainfall, observing the water quality of the runoff, and recording this data for future reference.

**Document Storage at IPSC** — In early 1992, the bid was awarded to set up the system utilizing IdentiTech (Melbourne, Florida) imaging software known as **FYI**. Two scan stations were installed utilizing 12" optical platters, an optical server, a database server, and two print stations. By the end of 1992, two additional scan stations had been installed and approximately 32,000 documents had been indexed and scanned into the system. IPSC had officially begun using electronic imaging as a major component to its records management system.

**High Energy Piping** — High Energy piping is critical to the operation of power plants. Damage and loss of life due to failure of main steam or hot reheat lines at other stations punctuated the need to look closely at our piping on a periodic basis.

The causes of piping failures include construction flaws, induced stresses such as steam or water hammer, hanger failures, cycle fatigue, and creep damage due to high temperatures over long periods of time.

Engineering began a carefully conceived plan to systematically inspect the high energy piping at IGS, beginning with the most critical. The purpose of this plan would be to identify construction flaws and gather critical baseline data for future evaluations. This five-year plan employed a variety of Non-Destructive Examination (NDE) techniques.

Some of the NDE techniques used were visual inspection, hanger measurements and inspection, dye penetrant examination, magnetic particle examination, ultrasonic examination, replication, load sensor readings, pipe diameter measurements, and radiographic examination.

**Baghouse Modifications** — A capital project to install sonic horns in the baghouse was initiated in 1992. Toward the end of the project installation, the differential pressure was so bad that the bags were being shaken by hand to clean them.

**Computer Aided Drafting** — IPSC purchased MicroStation and I/RAS B so work with all of the plant drawings could be worked hand-in-hand. IPSC began the process of establishing a master database of the latest plant drawings. Drawings from LADWP closed out projects, and as-found field verifications are then updated to the database. IPSC would scan new drawings and modify as needed.

IPSC began planning to implement AutoCAD in 1999. AutoCAD would allow drafting technicians to work in the same format as the engineers.

**Turbine Hydraulic Coupling** — The first hydraulic coupling bolts, installed on the Unit 2 'B' coupling during the 1992 fall outage, was an immediate success. Significantly reduced assembly time and precision alignments shortened every ensuing outage since converting to hydraulic coupling bolts.

Hydraulic coupling bolts were installed on every coupling that had been disassembled for sectionalized turbine inspections and repair. Only two more couplings in the Unit 1 turbine, C and D, did not have the hydraulic couplings but would be converted during the 1999 spring outage.

**Isolated Phase Bus Duct** — The isophase bus is used to transmit power from the generator to the generator step-up transformer. On July 17, 1992 the Unit 2 Generator tripped off line when the conductor in the isophase bus fell onto the bus enclosure and shorted out the generator.

Failure analysis determined the conductor support design was incorrect and the design of the original insulators was marginal. The bus manufacturer had installed the porcelain bus support insulators so the conductor hung from the insulators ( the insulators were in tension). Vibration from nearby equipment caused the babbitt support to pull out of the insulator, which caused the conductor to fall on the enclosure.

The isophase bus conductor support system was redesigned by installing a second set of supports under the conductor in addition to the original support on top of the conductor. A modified support insulator was also used to provide greater resistance to babbitt support pull out.

**Audit of 1991 Forms W-2 and 1099** — An audit team from Los Angeles Department of Water and Power (LADWP) examined 634 W-2 forms and 16 Vendor 1099 forms. The objective of the audit was to determine if the amounts reported on the forms for the 1991 calendar year were accurate. The auditors tested the accuracy of the employees' earnings and tax withholdings and then compared the findings to the W-2 forms.

They also tested the accuracy of the amounts reported on the 1099 forms with payments made to vendors.

The audit report stated that the taxable earnings and corresponding taxes withheld shown on W-2 forms and 1099 forms issued to employees and vendors, respectively, were accurate and properly reported to tax authorities.

**Number of Employees** — By the end of the year, the number of employees was 598.

## **IPA**

**Financing** — June 30, the current weighted average borrowing cost was 7.93 percent.

## **Other**

**Construction Workers' Housing (CWH) Units** — The final CWH units left the site.

**Rope Rescue Team Was Organized** — IPSC took the lead in organizing and arranging training for a twelve-member industrial rope rescue team, six of which were from IPSC and six from the other industries; namely, Brush Wellman, Continental Lime, and Ash Grove Cement.

## 1993 — A Year of Challenge

### IPSC

**Production Incentive Program** — IPSC employees earned 80 percent of targeted goals for an award of 4.0 percent of their annual base wages.

**Silicone Rubber Coatings Prevent HVDC Wall-Bushing Flashover** — HVDC Wall Bushing Studies, Final Report, EPRI EL-6923, July 1990.

Challenge: High-Voltage Direct-Current (HVDC) wall bushings are a critical component in HVDC transmission systems. Through an efficient insulating system of foil, paper, porcelain, and oil these horizontally mounted outdoor bushings pass huge direct currents through valve hall walls at each end of the transmission line. Unfortunately, the bushings account for many HVDC system flashovers—whereby the current jumps from the line to the wall, bypassing the bushing—which can cause substation/line outages or even catastrophic bushing failure. One way to reduce the frequency of such flashovers is to clean and grease the bushings regularly. However, this process is costly and labor intensive, particularly given that the bushings can be as long as 40 feet. At Intermountain Power Project — Southern Transmission System (IPP-STs), 5 flashovers occurred in three years at the utility's 500-kV HVDC Converter Station in Delta, Utah. At the Adelanto Converter Station, 10 flashovers occurred in a four-year period. The utility needed a cost-effective way to reduce the number of flashovers at these stations.

Response: Bonneville Power Administration, Los Angeles Department of Water and Power, New England Power Service Company, and EPRI co-sponsored a study to identify the mechanisms of HVDC wall-bushing flashover and to evaluate acceptable methods of in-service mitigation. Researchers at EPRI's High Voltage Transmission Research Center verified that two main mechanisms cause flashover. In one case, electrostatic attraction causes pollutants to deposit on the bushings, producing nonuniform condensation, leakage currents, arcing, and ultimately flashover when fog or humidity dampens the bushing. In the other case, valve hall rooftop shielding causes nonuniform rain wetting of the bushing and subsequent leakage currents. Tests showed that application of water repellent coatings, particularly RTV silicone rubber coatings, minimizes flashover in both instances. With proper application and cleaning, the easy-to-apply coating should eliminate flashovers for as long as 15 years. Given these findings, IPP-STs engineers decided to coat wall bushings, DC transducers, voltage dividers, and other insulation with RTV silicone at both Intermountain and Adelanto. In the almost two years since application of the coating, no flashovers have occurred.

Benefits: Intermountain Power Project — Southern Transmission System (IPP-STs) estimates that it will save \$4.4 million by coating HVDC wall bushings and other

insulating equipment at two of its stations with room-temperature-vulcanized (RTV) silicone rubber.

**Other Pensionary Benefits (OPB)** — Two accounts were set up to help pay for retirement benefits. The first was the Pension or Retirement account. The second was the Other Pensionary Benefits, meaning those not covered by the Pension benefit. The main items in the IPSC account called OPB are Life Insurance and a Medicare Supplement. The funds were set up to receive an annual deposit from IPSC. They were also set up to earn as much as possible, while still being careful and prudent so that inappropriate risks would not be taken. By following the financial forecasts for making annual deposits, and having the plan earn as much as possible, the goal was to have the necessary funds available as the work force aged and it became necessary to pay the earned pension benefits and the related OPB benefits.

**Maintenance Effectiveness** — The "Monthly Maintenance Indices Report" was again expanded to include delay codes.

Maintenance continues to fine tune the report to make it more effective so that maintenance effectiveness is maintained at the highest level in the industry with the lowest cost.

**Plant Information System** — The first phase of the PI system started-up in early 1993 with a DEC 6610 computer in the Administration Building running the PI historian and graphics programs. User access was through PCs connected to the LAN located throughout the plant. Two DEC 4100 computers gathered data from the back end of the plant and sent it to the home node. Most of the graphics displays for the system were drawn by Operations personnel.

**Variable Loading System** — A Variable Loading System (VLS) was installed and tested utilizing a hydraulic system to vary the spring loading in accordance with the pulverizer loading specifications. The testing indicated that the spring force on the roll wheels must be maintained within a narrow range at any specific pulverizer load (amount of coal input) to provide satisfactory performance with minimal vibration. The Variable Loading System would allow the pulverizer loading to be maintained in the optimal load range.

Several important improvements to increase the system reliability and reduce operation and maintenance costs were made by IPSC employees from the original design.

**Boiler Mobile Platform** — On May 5, 1993, while being lowered for disassembly, one-half of the main boiler platform (40 ft. x 40 ft.) slipped out of the two first grip cable clamps that were supporting the section. The section fell approximately 20 feet onto the sloped floor tubes. Fortunately no one was injured during the incident and damage to the platform was fully repairable.

This incident prompted a full investigation into design parameters and assembly procedures. The cause of the incident ultimately focused on incorrect torque used on the fist grip cable clamps. A full quality assurance program was developed by IPSC personnel and is now an integral part of platform assembly, operation, and disassembly. These changes have made the mobile platform an integral and reliable tool within the boiler maintenance program, saving hundreds of hours in both assembly and disassembly, while providing complete elevation control in work access positioning.

**Predictive Maintenance** — In 1993, in order to quantify the results of the program, a unified system of determining savings was begun. This was instigated to have an established method of determining the value of each problem identified by predictive maintenance. This method has consistently shown a net annual savings of between \$1-1/2 and \$2 million savings each year.

**Programmable Logic Controller** — IPSC began evaluating the upgrade of the Modicon 584 controller to another Programmable Logic Controller (PLC) after Modicon indicated they were discontinuing support for the 584 in 1997.

**Retirement Unit Catalog** — In order to clarify and define the difference between capital and expense items, Engineering embarked on a project in 1993 to prepare a Retirement Unit Catalog (RUC). The purpose of the RUC is to list the plant equipment that, when replaced, would constitute a capital project and not maintenance. The approximately 250-page document was completed by Engineering ahead of schedule and covered all existing plant equipment and buildings.

**Number of Employees** — By the end of the year, the number of employees was 599.

## **IPA**

**Financing** — June 30, the current weighted average borrowing cost was 7.26 percent.

## 1994 — Another Year of Comparisons

### IPSC

**Production Incentive Program** — The Intermountain Power Service Corporation (IPSC) personnel achieved 77 percent of targeted goals for an award of 3.87 of their annual base wages, compared to 80 percent for the previous year. The primary difference resulted from an increase in lost time accidents and severity level. The net capacity factor was 86.98 percent and equivalent availability was 91.42 percent.

**Safety and Training Transfer** — In September of 1994, the Safety and Training Section of the Support Services Department was moved to the Operations Department. This was a move to consolidate the expertise of two work groups having knowledge about safety and hazardous products, and those employees who operate equipment in power plants.

**Bench Marking Study** — This year the final results of a Bench Marking Study conducted by UMS Corporation of Parsippany, New Jersey were released. The study compared 107 individual electric generating units owned by ten utilities across the country. Of the seven performance categories, IPP ranked "Best Performer" in all but the Gas Turbine category which didn't apply to IPP. The study measures service level against cost, but also examines practices. The results showed that IPSC maintains high performance levels by constant attention to plant maintenance, operations, chemistry, pollution control, technical support, coal handling, and costs.

**Maintenance Technology Award** — IPSC achieved recognition for its high level of skill and performance on May 25, 1994, when it was named recipient of Maintenance and Technology magazine's "Outstanding Maintenance Organization" for the year 1993, in the utility class. The magazine cited an emphasis on "training and planning along with an integrated Predictive/Preventive Maintenance Program to drive performance indices toward performance goals."

Mr. Ciro Buttacavoli, president of the magazine, presented the award to Joe Hamblin, IPSC Maintenance Superintendent. A reception honoring this achievement was attended by about 200 employees.



Joe D. Hamblin received an award from Maintenance and Technology magazine for Outstanding Maintenance Organization 1993.



**Scrubber Reheat Tube Bundles Removal** — This project had been in the planning stages for several years. After extensive testing and using both computer and physical modeling of the mist eliminators and liquid collectors, a final design was submitted to the state of Utah for approval. The Utah State Board of Air Quality gave its approval to the new design, and the modifications were installed in IGS Unit 2 in November of 1994. The project consisted of converting from a dry stack with reheat to a wet stack. The actual work was organized in two steps. First, modifications to the chimney to permit wet stack operations; and second, removal of the reheat tube bundles in the scrubber modules. Work on the stack included adding turning vanes and moisture collectors, modifying the drainage system and reorganizing the instrumentation and control systems. This was necessary to mitigate liquid discharge. When the stack had been modified, a variance permit to perform the required testing was obtained. After testing showed that the new system worked, a new operating permit was granted by the state. The next step of removing the reheat bundles was then started; it would take several months before this work was completed. There were huge savings realized by not having to put heat back into the flue gas. The lifetime savings of these changes included less maintenance time, improved heat rate, and elimination of equipment replacement costs would have an estimated total savings of \$28,750,000.

**Plant Information System** — In 1994, Phase 2 of the PI project added power block data. The DEC VAX 4100 computers were moved from the scrubbers to the unit Foxboro computer rooms and two new DEC Alpha 3500 computers were installed in their places. Foxboro computer gateways were purchased to link the information computer Foxnets with the VAX 4100s. This made over 9000 data points from power block available to PI for display and trending and reduced the load on the Fox 1/A, thus extending the life of the Fox1/A. Also in 1994, an on-line heat rate and performance calculation package (PMAX) was added to run along with the PI software.

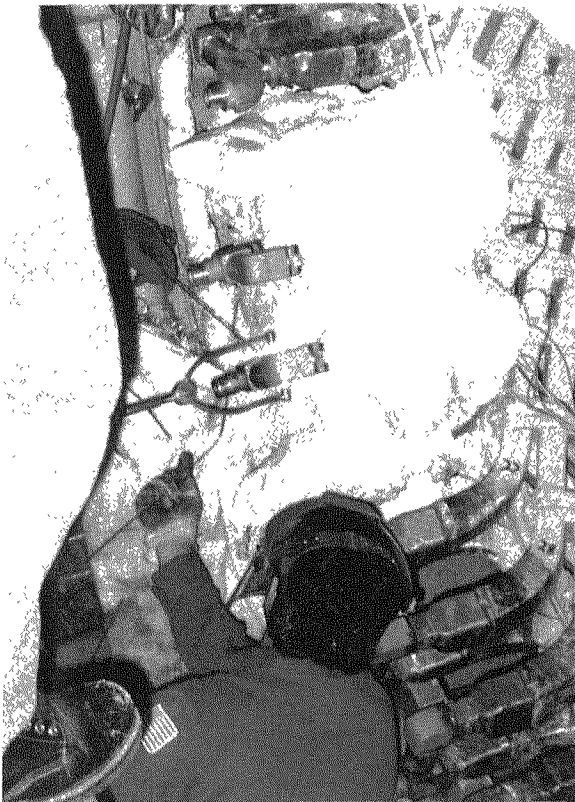
**Safety Maintenance Tagging System** — IPSC assumed software support responsibility for the tagging system. Minor changes were made to make the system more functional for IPSC employees. These changes helped to modernize all aspects of the power generation process and produced a top level of safety, productivity, and availability.

**Document Storage at IPSC** — Various methods were developed to enhance the efficiency of document management at IPSC. Documents were now scanned into the system through the use of nine scan stations strategically located throughout the plant site. Other documents created via word processor or spreadsheet applications were imported directly into the Imaging System from the workstation. The COLD (Computer Output to Laser Disk) system enabled capture of electronic documents directly from the MPAC system on the DEC computer, indexed them, and inserted them into the Imaging System. A new storage medium on 5 1/4 inch optical platters provided increased benefits compared with the original 12 inch optical platters. This automation also

provided instant access to many of the purchasing and accounting documents required by various departments.

Utilization of the Imaging System for Document Management moved well beyond the initial intent of document archival and retrieval. The Purchasing, Receiving, and Accounting Sections were impacted most by the evolvement of records management.

The benefits of electronic imaging integration at IPSC included elimination of many of the manual document filing and routing practices with the related paper document storage and handling requirements. A reduction in human resources dedicated to paper document management was realized, while enhancing document availability. Further integration of the Imaging System with our business practices became an ongoing process to help realize the system's full benefits.



GE employees performed a generator stator bar repair.

**Generator Stator** — General Electric (GE), the manufacturer of the generator, had advised IPSC several years earlier that a potential problem may develop concerning stator bars. The problem occurs when small voids in the water connection to the stator bars allow corrosion cells to form that eventually cause leaks in the bars. The generator windings at the Intermountain Generating Station are cooled using a combination of de-ionized water and hydrogen gas. The de-ionized water is pumped through hollow conductors in the stator bars. The stator bars are insulated with epoxy mica insulation. During generator operation the insulated stator bars are surrounded by hydrogen gas.

When the generator is on line, tests of the stator cooling water tank vent and dissolved oxygen in the cooling water are performed routinely to determine if water could be leaking onto the stator insulation. When the generator is off line, a more sophisticated off-line test, called the pressure/vacuum test is used. It can determine the cooling systems integrity, and

indicate the possibility a leak exists somewhere in the stator. During the Unit 2 spring outage, inspection of the stator revealed two leaks. These were repaired by stripping the insulation in the suspect area and temporarily patching the holes with an anaerobic cement. During the Unit 1 fall outage inspection a leak was found at a brazed connection and was repaired by welding. After the outages, IPSC Technical Services

began discussions with GE and other utilities and vendors to develop a more permanent repair method.

**Baghouse Modifications** — Sonic horns were installed by 1994, and an immediate drop in differential pressure was realized. This lower differential pressure resulted in extending the life of the bags to over twice their original estimated life, and lower operating costs.

**Engineering Drawing System** — Early in the development of the Intermountain Power Project efforts were made to establish a reliable database of plant drawings and documentation. Available technology at the time dictated that this occur primarily in various hard copy formats. As the plant matured and drawings were modified to reflect actual as-built conditions, the master drawings, on aperture cards, started to lose their quality as a tool for current employees. This degeneration in the value of this vast resource was a major concern to management. The most cost effective resolution to this problem was the development of a widely accessible, computer-based master set of drawings. Through the coordinated efforts of DWP and IPSC engineering personnel, a fully functional electronic master database was put in operation for all 170,000 station drawings.

In the early years of operation, it became readily apparent that both the update process and the resulting quality from successive generations of microfilm copied drawings presented a problem for the long-term maintenance of station drawings. It was also obvious that significant resources would have to be applied if the database was to be salvaged, and the effects of as-built degeneration reversed.

IPSC quickly became aware of the many industrial and power facilities that were in the midst of this same conversion, spending well over \$1,000,000 for contractors, just to achieve an electronic drawing system where they could begin drawing corrections. IPSC realized that they would have to complete this conversion for far less and do it with existing employees.

**Number of Employees** — By the end of the year, the number of employees was 582.

## **IPA**

**Financing** — June 30, the current weighted average borrowing cost was 7.25 percent.

## 1995 — A Year of Increased Activities and Ratings

### IPSC

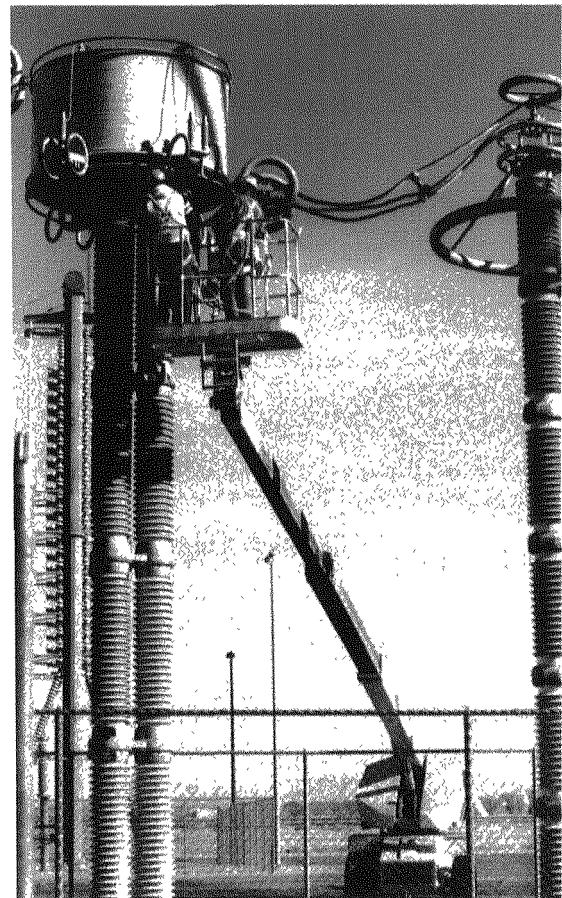
**Production Incentive Program** — IPSC employees earned 64.62 percent of targeted goals for an award of 3.23 of their annual base wages this year, somewhat below last year because of forced outages and lost time accidents.

**Operation Rating Increase** — The recommendation by IPSC to increase the operational ratings on IGS Units 1 and 2 was accepted with an effective date of July 1. Rated capacity was increased from 840 Mega Watts (MW) gross (800 MW net) to a two load rating of 865 MW gross (820 MW net) and 855 MW gross (810 MW net) during the summer months of June, July, August, and September. This increased Station capacity by 40 MW net for eight months and 20 MW net during the four summer months, for a weighted average station increase of 33 MW.

**IPSC Crew Quickly Restores Pole 2 to Service After Explosion at Converter Station** — On January 15, at approximately 11:30 a.m., an explosion occurred at the Intermountain Converter Station DC Switchyard, taking Pole 2 off line.

"The explosion may have been caused by a blemish resembling a small dent in the grounded steel conduit shaft of the Direct Current (DC) transducer (a piece of equipment used to measure DC line current). This weakness eventually caused the transducer to fail which resulted in an explosion. In addition, the explosion pulled a 500 kilovolt (kV) line disconnect switch from its base and the transducer fell into a 500 kV arrester. Other equipment in close proximity to the transducer was also damaged from pieces of metal and porcelain insulators hurled by the explosion," said Travis Smith, Intermountain Converter Station Assistant Manager.

According to Converter Station management, it is not known whether the blemish was in the



Direct Current Transducer at Converter Station Switchyard exploded.

steel conduit when it was installed or as a result of normal usage over the past several years of operation.

The Intermountain Power Service Corporation crews responded immediately to the incident. Their efforts were hampered by an oil fire that erupted in dangerously close proximity to the active Pole 1, creating additional electric shock hazards. The fire was brought under control within 30 minutes by IPSC's Fire Brigade.



Converter Station Switchyard.

Converter Station personnel were immediately on the scene to assess the damage, solving logistical problems, and planning reconstruction efforts. As a result of the skills and experience of the Converter Station maintenance, operations, and engineering personnel, the damaged sections of the Pole 2 electrical equipment were cleaned, reconstructed, and tested, enabling Pole 2 to be brought back on line by Friday, January 20.

Other departments at the plant were also involved in the quick restoration of Pole 2 to service. Operation's Fuel Equipment Operators and the

Maintenance Department's Laborers did an outstanding job in hauling ground fill and removing oil soaked soil from the scene which was processed in accordance with environmental regulations. The Maintenance Department further assisted by providing a 90-ton capacity crane and operator to move equipment as well as Painters to help patch broken porcelain insulators. Technical Services provided expertise in the evaluation and testing of the DC structures affected. Also, Support Services was involved with the risk management evaluation and purchase of replacement parts.

S. Gale Chapman, Plant Manager said, "All of our people worked exceptionally well with the remediation of the oil spill, cleanup, and rapid reconstruction in quickly bringing Pole 2 back on line. Their united efforts helped us recover from a major event in an expeditious manner." Damage was estimated at \$364,000.

**Generator Stator Epoxy Repairs** — The Unit 1 Generator failed the pressure/vacuum test during the spring outage. Three leaks were repaired using the same method implemented on the Unit 2 Generator.

**Combustion Reheat Disposal System** — The project to convert Unit 1 to a wet stack was completed in April 1995. The wet stack operation improved plant heat rate,

lowered operation and maintenance costs, and improved scrubber module availability with minimal negative impacts.

**Engineering Drawing System** — Many methods of archiving, accessing, modifying, updating, printing, and distributing drawings were investigated. Ultimately, an electronic system utilizing both raster and vector technology was approved. This system allowed quick access, critical quality improvement capability, and greater productivity in dealing with drawing update concerns.

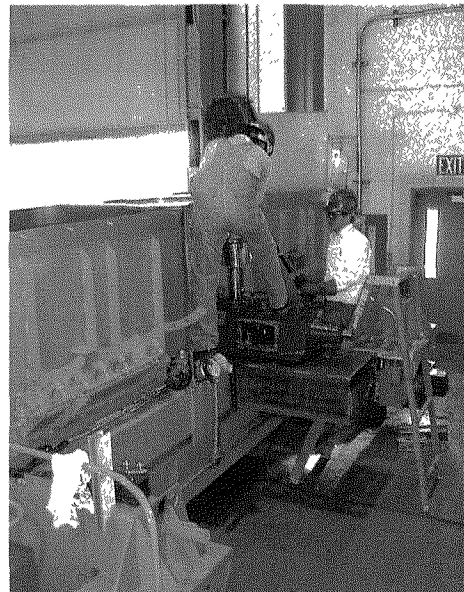
The master drawings had resided continuously at DWP headquarters in Los Angeles. They accepted the assignment to scan the approximate 160,000 drawings onto compact disc for transfer to the Intermountain Power Generating Station. A scanner was purchased and the job was completed in approximately six months. After receiving the 75+ compact discs, each containing over 600 million bytes of data, IPSC coordinated the establishment of a network based drawing system where the drawings were renamed, sorted, and fed into directories named after the drawings themselves. This allowed anyone to locate any drawing needed simply by following the drawing name path from any approved terminal throughout the station.

Another vital aspect of the drawing system is the internal update and quality control system. With the procedures now in place, a drawing could be updated by the responsible engineer, verified, and re-entered into the master database within a matter of days. Halting the continual degradation, providing quick general access to vital information, and ensuring expedited update for drawing corrections made this a valuable system for all departments involved with the design, operation, and maintenance of Intermountain Power Generating Station.

**Programmable Logic Controller** — IPSC continued to study several PLC manufacturers, including Modicon, to determine if their products could replace the Modicon 584 products on site. The design criteria included cost, software conversion, communication to Modbus, training requirements, and ease of installation.

Following a 12-month evaluation, a decision was made to go with the new Square D/Modicon Quantum product line. IPSC was able to negotiate a favorable five-year price contract and meet all of the design criteria.

**Rotary Plow Feeder Redesign** — In 1995 Engineering completed a study to investigate redesign of the coal handling rotary plows. The purpose of the study was to analyze viable methods of reducing the maintenance costs associated with the hydraulic equipment and



Employees working on rotary plow.



controls on the plows. The study showed that eliminating the hydraulics in favor of electronic controls would result in higher plow reliability and lower maintenance costs.

**Plant Closure Study** — At the request of the Operating Agent, Engineering studied and prepared a report on the necessary tasks and costs associated with the possible decommissioning of the station. Several options were explored from total and permanent shutdown to a temporary one-year shutdown. The study included detailed lists on the decommissioning steps and costs for every major plant system and equipment. The results of the study were forwarded to the Operating Agent for their use. After careful consideration of the study and considering the options then available, the Operating Agent determined that the possibility of closing the plant for a short- or long-term time period was not a workable course of action.

**Governor's Award** — IPSC was recognized by the Governor's Council on Worksite Health and Fitness for its efforts to establish a workplace program that emphasizes the need to work with health care and fitness to reduce the seriousness of workplace injuries.

**Number of Employees** — By the end of the year, the number of employees was 569.

## **LADWP**

**Operating Agent Representative** — As a result of the retirement of Mr. Bruce E. Blowey from the Los Angeles Department of Water and Power, Mr. Charles L. DeVore was appointed as the Operating Agent Representative.

## **IPA**

**IPA Has New Partner in Crandall Canyon Project** — Nevada Electric Investment Company, a wholly-owned subsidiary of Nevada Power Company sold its 50 percent interest in the Crandall Canyon Project (CCP) to Andalex Resources, Inc. The deal was completed on January 12. The main asset of CCP is the Crandall Canyon Mine, also known as the Genwal Mine.

The Intermountain Power Agency (IPA) had owned the other 50 percent interest in CCP since July 1991. Andalex has been a supplier of long-term coal for IPA. Under the 1994 renegotiated terms of that coal supply agreement, Andalex made special provisions for IPA's use of their Wildcat coal loading facility, benefitting both IPA and CCP. Andalex has substantial experience and expertise in the coal industry in Utah.

**Financing** — June 30, the current weighted average borrowing cost was 7.35 percent.



## 1996 — A Year of Self Examination

### IPSC

**Production Incentive Program** — IPSC Employees earned 79 percent of targeted goals for an award of 3.94 percent of their annual base wage this year, significantly more than last year's 64.62 percent.

**Purchasing Team** — In October IPSC Staff approved a plan to organize the Purchasing Section into a self-directed team. November and December involved coaching and training Purchasing employees to assist them in restructuring their work and mode of operation. The Purchasing Team was fully implemented in January of 1997 and has been very successful.

**START Program** — In December IPSC commenced a new company-wide effort to reduce the frequency and severity of employee injuries. The plan encompassed two significant changes at IPSC. The Supervisor Training in Accident Reduction Techniques (START) Program was initiated, which laid the groundwork for developing a safety culture throughout our organization. Key elements of START are:

- Recognizing Unsafe Acts, Conditions, Symptoms, and Causes
- Investigating Equipment, Materials, People, and Behavior
- Educating Through Management and Employee Training
- Motivating Through Accountability and Leadership

The START Program holds supervisors and managers accountable for safety improvement. This was accomplished through the performance evaluation process. The accomplishment review score of a supervisor is adjusted up or down by as much as five points depending on the number of OSHA recordable accidents the supervisor's employees have sustained compared to the number in the previous evaluation year.

**Near Miss Accidents** — In February a near miss accident reporting program was implemented. The program is an attempt to monitor and increase employee awareness of accident prevention techniques.

**First Optical DC Current Transducer in the USA** — ABB Power Systems delivered the first DC-OCT (Direct Current - Optical Current Transducer) sold in the USA to the Intermountain Power HVDC Converter Station in Delta, Utah.

Optical systems were becoming increasingly important for measuring of current, voltage, and temperature in high voltage environments.

The newly developed optical direct current transducer consisted of a few simple and reliable components.

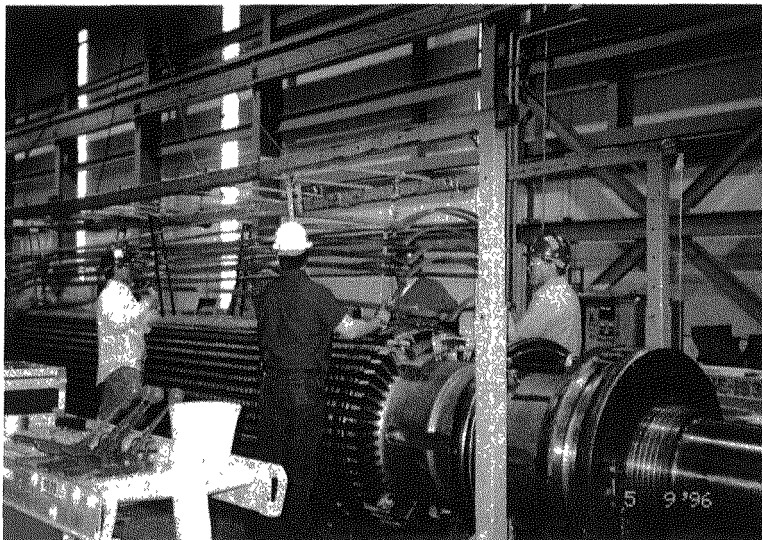
The general benefit of using optical fibers for signal transmission is full galvanic separation between high voltage and control room. The simple design meant that installation would be easy, and integral self-monitoring would result in low maintenance requirements.

This newly developed current measuring device, scheduled for delivery in May 1996, would be installed as a direct replacement for a conventional DCCT (Direct Current - Current Transducer), vintage 1984, in the 500 kV main circuit.

**Unit 2 Operation** — An extended planned outage for repair work on Unit 2, and reduced demand through the end of the fiscal year resulted in lower availability and capacity factors for the year.

**Unit 2 Field Failure** — During the spring outage, routine electrical testing of the Unit 2 generator field indicated the field had become short circuited to ground. The field was grounded at the electrical center point of the winding. The electrical center point of the field is located at the pole-to-pole jumpers which connect the positive coils to the negative coils.

The Unit 2 Generator Field failed because the pole-to-pole jumpers were initially fabricated with insufficient expansion capability. The jumpers failed due to low cycle fatigue caused by starting and stopping the generator. This failure may have been accelerated due to marginal retaining ring insulation thickness which allowed increased stress in the pole-to-pole jumpers when the field was brought up to speed.



IPSC employees performing a generator field rewind.

Catastrophic failure of the pole-to-pole jumpers contaminated the entire field cooling passages with conductive particles. In order to ensure reliable operation of the generator a complete field rewind was performed. IPSC personnel, working with personnel from General Electric, disassembled the field, cleaned all the copper windings, replaced all the insulation, and reassembled the field.

The field was electrically tested and then reinstalled in the generator.

The extensive repair work resulted in a rebuilt generator with a new unit warranty from the manufacturer.

Unit 1 was inspected to determine if it would need the same level of repair as Unit 2. Fortunately, the inspection showed that the pole-to-pole jumper could be replaced before it failed. This action saved a large amount of time and money that otherwise would have been spent doing the same work on Unit 1.

**PMA Assessment** — Power Management Associates (PMA) conducted an assessment of IPSC's operation and management of the Project. A copy of PMA's 1996 Executive Summary is contained in Exhibit #7.

**Plant Information System** — In 1996, the DEC 6610 home node computer was replaced with a DEC Alpha 2100 computer. Also, a direct communication link to the Coordinated Control System (CCS) points was implemented, rather than read control data from the Fox 1/A. This improved resolution of this data to 2-3 seconds.

A link to the Converter Station was added to PI and adding Coal Yard and Bottom Ash data was planned for the future. A separate stand-alone PI System was installed in the Scrubber Control Room to replace the Modvue computer there.

**Voice Mail at IPSC** — Voice mail was installed at IPSC to effectively handle the large load of incoming telephone calls to IPSC employees. IPSC has approximately 1100 telephones installed plant wide with 250 telephones assigned to personnel requiring telephone messages to be taken. The amount of clerical time was significantly reduced through the implementation of an automated voice messaging system. Callers both from the outside and inside could call and leave a message on the employee's personal voice mail. This capability was a great benefit for employees as important calls were no longer lost or missed.

The voice mail system saved approximately 110 hours per month of clerical time. The voice mail system was manufactured by the same company as our main telephone PBX system. This provided maximum integration, features, and reliability.

**Generator Stator** — General Electric (GE) developed a process for making stator repairs that they felt would eliminate the likelihood of more leaks developing throughout the life of the generator. The IPSC Technical Services department, reviewed the GE process. The GE process injected a thermal setting epoxy resin into the end face of the stator to seal the interface between the stator bar and the cooling water. IPSC concluded that the epoxy repair process was the best available on the market at the time. GE was selected by IPSC to locate and repair all the stator bar leaks in Unit 2 during the 1996 outage.

At this time it was decided to increase the scope of the stator bar repairs. The repair job was increased to a global epoxy repair to prevent formation of future leaks. The entire winding water connections were repaired using the epoxy repair method. This

preventive repair restored the generator winding to an “as new” condition. Post outage pressure/vacuum tests indicated no leaks in the stator.

**Site Economic Development Plan** — In mid 1996, due to the economic concerns created by deregulation, an economic development plan was created. This plan contained the resources available at the generating station that could be utilized to generate additional revenue and lower the operating cost of the facility.

A plan was developed that included all the resources that were available and what the facility had to offer to perspective customers. This plan would be feasible if a need ever arose to utilize the facility for additional revenue generation.

**Rotary Plow Feeder Redesign** — Rotary Plow 7D was removed from active reclaim in the fall of 1996 for modification of the power and control systems. The project schedule showed startup testing on the modified plow to begin in the spring of 1997.

**Soot Blower Control** — During the main outage on Unit 2 the Combustion Monitoring Cleaning System (CMCS) for sootblower monitoring and control was replaced with the new Diamond Power BOiler cleaning System (BOS), control system. This new system uses the latest in technology in programmable logic controller design available to date. The BOS system provides a graphics display CRT screen which is used as the operator interface for programming system operation. The display indicates system status continuously and alerts the Unit Operator of any abnormal operating conditions. The new system also provides additional maintenance information so potential problems are remedied before they become operational problems. Malfunctions such as sootblower failures are recorded in the controller memory so Maintenance personnel can monitor every blower in the system on a continual basis.

The old CMCS that was removed from Unit 2 was stored in the warehouse so components from that system could be used to extend the life of the CMCS still in use on Unit 1. As replacement parts for the CMCS on Unit 1 become exhausted, the control system for Unit 1 will be replaced with the newest controller design available.

**Governor’s Award** — IPSC was again recognized by the Governor’s Council on Worksite Health and Fitness for its work with creating new approaches to health and fitness programs that coordinate early return to work with medical care and rehabilitation.

**Number of Employees** — By the end of the year, the number of employees was 559.

## **LADWP**

**Assessment of the IPSC Pension and OPB Funds** — The operating agent, LADWP, determined that a review of the policies, procedures; and general fiscal approach to the

Pension fund and the Other Pensionary Benefit fund was in order. The manager of the Department's Pension Fund, Mr. Richard Goss, was asked to make a general review of the manner in which IPSC was handling the Pension and OPB funds. Copies of the performance information produced by the fund manager, The Frank Russell Company; the most current account balances; and projections of the future contributions needed to keep the funds financially sound were submitted to the Department.

Mr. Goss indicated in his review of the information that he felt the fund was in good shape, well thought out, and well run. He did suggest that in the future it would be prudent to make the necessary fund contributions sooner rather than later whenever possible. The reason for this suggestion was to have the fund itself earn as much as possible of the necessary contributions and then in later years it might be possible to reduce the annual contribution.

## IPA

**Financing** — A series of activities were accomplished that had a major impact in reducing Project debt. The 1996 Series D advance refunding bonds were delivered probably, with gross savings of about \$42 million. A Forward Delivery Bond Purchase Agreement generated \$60 million in savings.

June 30, the current weighted average borrowing cost was 6.34 percent.

## Other

**HVDC Helps Disturbed Networks** — The following information was in an article published by "PowerLink" - Issue #3 1996, pages 1 and 3:

"Two important HVDC links supplied by ABB, Pacific Intertie and Intermountain, have again demonstrated the ruggedness and dependability of HVDC transmission systems in severe disturbance conditions. The asynchronous nature of the HVDC solution, and the fact that the power transmitted is always fully controlled, explains the good performance of HVDC schemes even when the AC network is badly disturbed.

The power grid of western United States experienced a major disturbance on July 2, 1996, and then on August 10 as well. There are two large HVDC links in the system. One runs from Utah to Los Angeles area and is called Intermountain. Its rating is 1900 MW. The other is the Pacific HVDC Intertie with a rating of 3150 MW, running from the Dalles in Oregon to the same destination - Los Angeles.

The July 2nd Event: Around 1:25 p.m., a 345 kV line in southern Idaho tripped due to a short circuit and some seconds later another 345 kV line parallel to the first one also tripped, probably as a result of relay trouble. This caused voltage drops and overloads on other lines and within half a minute a number of major transmission lines both on the 500 kV, the 345 kV, and the 230 kV systems had tripped. Some of the tripping was caused by predetermined islanding programs to counteract major disturbances, and as a result the western system was divided into five islands, approximately as shown in the picture. At the time of this incident Intermountain was transmitting 1900 MW and the Pacific HVDC Intertie 2900 MW into Los Angeles. Transmission over the two HVDC links continued undisturbed throughout the events.



Islanding to counteract disturbances.

Power grid of Western U.S., experienced a major power disturbance on July 2, 1996.

Although the Los Angeles area was not in synchronism either with Oregon or with Utah after all the tripping had occurred, power transmission of 4800 MW by means of HVDC continued into Southern California, and as a result major disturbances and blackouts were avoided in the Los Angeles area.

The August 10th Event: An even larger disturbance occurred in the same area on August 10th. An earth fault at one of the 500 kV AC Interties between Oregon and California initiated the course of events. The two parallel AC lines also tripped and transmission of 3200 MW was interrupted.

This time the AC voltage became very low at the Sylmar Converter Station (the south terminal of Pacific Intertie) and the station lost its auxiliary power and was taken out of operation by various protective devices. The Intermountain transmission survived the critical situation and continued to transmit power in spite of distorted AC voltage and commutation failures."

## 1997 — A Year of Reductions

### IPSC

**Production Incentive Program** — This year the employees earned a record high 96.4 percent of targeted goals for an award of 4.82 percent of their annual base wages.

**Planning Team** — In August the Maintenance Department organized the Planning Section into a self-directed team. The team approach has been very successful in coordinating work and covering the required projects so that each team member has ownership in making sure the work is planned and completed in a timely manner.

**New Department Head** — In September the IPSC Board of Directors approved George W. Cross as the new Superintendent of Operations. George replaces Robert A. Davis who retired in October. George was also appointed Corporate Vice-President.

**Electrical Section Transfer** — The Electrical Section in the Maintenance Department was moved to the Technical Services Department. This reorganization (combining the Instrument and Controls Section with the Electrical Section along with other factors) allowed for the reduction of nine hourly, two supervisor, and one assistant superintendent positions (through early retirement or severance packages). The Instrument and Electrical Section is now able to back up and support each craft area on some cross-trained issues. This is especially true on the composite back shift crew where emergency support of plant operations is critical. Further integration is being studied to determine job tasks that justify cross training as compared to workload issues required for efficient maintenance support.

**Work Force Reduction** — A program to reduce the work force by approximately 10 percent was approved by the Board of Directors on May 22, 1997. IPSC management worked with the consulting firm of Towers Perrin, the legal firm of Fabian and Clendenin, and Bruce Blowey representing the Department of Water and Power to prepare a written brochure explaining how the reductions would be made. The brochure also explained to the employees how they could determine if they wanted to submit an offer to voluntarily quit the work force and leave under the Enhanced Retirement Plan or the Incentive Severance Plan.

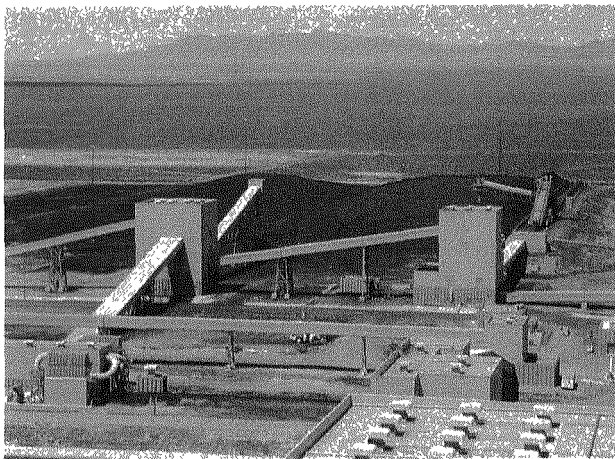
Each employee who offered to quit was required to make their offer in writing. A 45-day window was designed to allow for review and discussion of the consequences of making such an offer. Each employee was encouraged to discuss the consequences with a qualified advisor. The window for the receipt of offers closed on July 25, 1997. A final seven-day waiting period of reconsideration would begin when an employee was notified that IPSC would accept their offer to quit. Following all the proper waiting periods, the first group of 33 employees left on August 7, 1997. A second group of 28 left on August 20, 1997. A third group of 10 employees left between September 30,



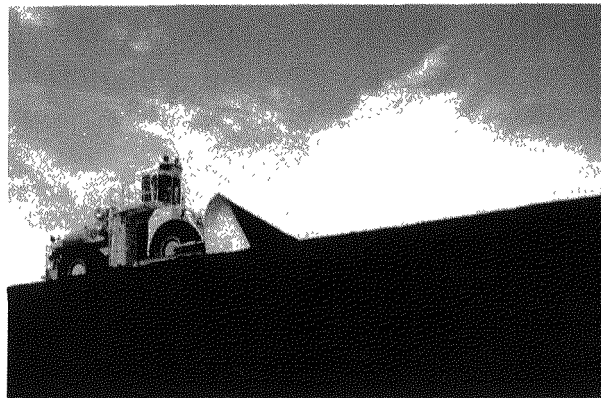
and October 29, 1997. During 1997, seventy-one (71) employees left IPSC using the Enhanced Retirement Plan or the Incentive Severance Plan.

**Heat Rate** — This year the Project approached its highest generation level in its history. Additionally, the Project achieved its best net heat rate - 9,519 BTU/kWh.

**Increased Capacity** — On October 1, 1996 the units were each up-rated to a new dual-load gross rating of 865 MW for the summer months of June, July, August, and September and 875 MW for the other months of the year. This up-rating had the potential to increase station generation by 75,000 MWh, per unit, per year, at an 85 percent capacity factor. The result was an opportunity to increase generation, reduce heat rate, and purchase more spot market coal, all of which would help lower the cost of power.



Coal Pile looking north from the top of Unit 2 Boiler.



Letourneau used to move coal. The blade is 8 ft. 8 in. high by 24 ft. wide. The tires are 7 ft. 10 in. in diameter.

critical. This year the performance, vibration, and lube oil portion of the program produced savings of almost \$1.9 million.

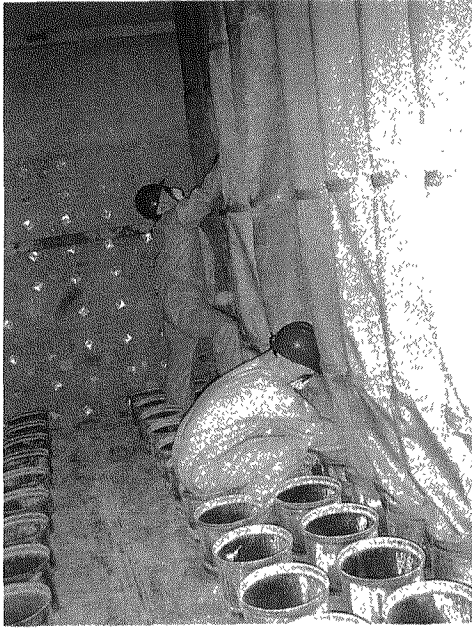
**Coal Stockpile Inventory Reduction** —

Further cost savings would result from reducing the coal stockpile inventory target from 1,200,000 tons to 750,000 tons. This year the first phase of that reduction was accomplished as a result of higher generation and reduced coal purchases. Tests for blending and using lower quality out-of-state coal were conducted this year without major problems. Further testing will be conducted to determine the full operational impact of this alternative coal on the boilers.



Coal pile looking NW from the top of Transfer Building #2.

**Predictive Maintenance Benefits** — The Predictive Maintenance Program continues to produce savings by identifying and resolving problems before they become



IPSC employees replacing filter bags in the baghouse.

**Filter Bag Replacement Program** — The first year of a five-year filter bag replacement program was completed this year by IPSC personnel. Filter bag life at IPP is substantially longer than normal because of the installation of sonic horns to the units.

**Rotary Plow Feeders** — One of the rotary plow feeders in the coal handling area was successfully converted from a hydraulic system to a more reliable all-electric system. Approval was received to continue the modifications for two additional plows during the upcoming 1997-98 fiscal year.

**Sale of Fly Ash** — Sales of fly ash increased this year. A high emphasis on combustion parameters makes the fly ash from IPP very desirable as an additive to concrete.

**Railcar Service Center Extended Services** — As part of the ongoing effort to reduce costs, an evaluation of the IPP Railcar Service Center was made to determine whether it could provide extended services to other railcar owners. The evaluation resulted in a business plan and a marketing brochure that described the Center's capabilities. As part of this business plan the name of the center was changed from Intermountain Railcar Service Center (RCSC) to Intermountain Railcar (IR).

**Internet History at IPSC** — Internet service was first utilized at IPSC in 1997 as a cost effective means of replacing the CompuServe account used to obtain technical information for maintaining computer systems. As the amount of information available from vendors, governing agencies, and others on the Internet increased, employees were better able to complete their job functions.

IPSC today uses US West as its Internet provider which allows for electronic mail and browsing Internet sites for information. The Internet is currently tied to IPSC's network using "firewall" protection. IPSC has about 100 users on the Internet, and Computer Services is finding that as time passes vendors are increasingly referring questions, software, and problem resolutions to the Internet as the only source of information. Computer information from the Internet is available instantaneously and does not require days of delay for information to be sent by mail or for returned phone calls. All the computer systems at IPSC such as the Prime computer, Digital Equipment Computers, LAN servers, communications equipment, and PCs rely on the Internet as the source of updates, patches, and bug fixes.

**IPSC Tool Room Bar Coding** — IPSC implemented Bar coding to become more competitive and efficient in its mission of generating power. A pilot project was initiated

in 1997, to determine the feasibility of an automated bar code system in the main IPSC tool room. Bar coding increases the productivity of checking tools in and out of the tool room facility and reduce the manpower required to handle paper work in the existing system. Bar coding would provide the vehicle for automated tool transactions which includes a quicker process of tool check-in and reduced manpower needed for data entry at the computer terminals.

IPSC would be able to begin bar coding at a fraction of the cost that typical industries would incur by using in-house personnel. Typical systems were quoted at \$100,000 to \$600,000. By making use of IPSC's available resources, bar coding would be implemented at a cost of approximately \$28,000.

The system is currently in the testing and implementation phase and will not be available for use until the second quarter of 1999. An evaluation will be conducted to see if the system has met its goals and if it is a viable tool for IPSC. Expansion of the system is anticipated for the warehouse and outlying tool rooms if the current system proves beneficial.

**The Year 2000 Compliance Testing** — It is IPSC's goal to ensure that all Information Systems at IPF will maintain their intended function and operation through the Year 2000. "Y2K Ready" at IPF means that the power plant facilities including electronic devices and software will maintain their function on January 1, 2000 and all other dates. Efforts to have the plant Y2K Ready began with the MPAC System in 1993 and many other computer systems have been tested over the years. In the Fall, Y2K Readiness efforts were expanded to identify and inventory all computers, software, and devices with embedded systems (microprocessors or chips). A comprehensive database lists all devices (or software), contact persons, vendor names/addresses, vendor web sites, IPSC testing results, vendor testing, and documentation. This is used to ensure all systems are being addressed.

The Y2K project has been divided into two components. The first is related to business issues such as accounting, purchasing, risk management, communications, and information systems.

The second component is related to process issues such as operations, maintenance, Converter Station, environmental, and engineering.

**Generator Stator** — General Electric (GE) performed a global epoxy injection repair of the Unit 1 stator winding in 1997. This process sealed the interface between the conductors and the water connections with an epoxy coating to prevent water leaks in the winding. Shortly after the generator returned to service in 1997, on-line testing of the generator winding indicated additional leaks had formed in the generator winding. During the Unit 1 outage in the spring of 1999 the stator winding was inspected and three additional leaks were found in the winding water connections. These leaks were

caused by manufacturing defects (casting porosity and incomplete braze joints). None of the areas repaired during the global epoxy injection had developed leaks.

**Railcar Service Center Study** — Engineering studied the economics of operation of the Railcar Service Center (RCSC). Many possible alternatives were studied including the possibility of leasing the RCSC to outside contractors, closing the RCSC, and contracting work to other companies. The report showed that both the facilities and personnel could support several times the amount of work currently completed at the RCSC. This study resulted in a reduction in RCSC staffing and an effort to market RCSC services to others.

**Audit of Payroll (including benefits and production incentive)** — An audit team representing the Audit Committee of the IPP Coordinating Committee performed an audit of the payroll costs recorded by IPSC for the period of July 1, 1996 through June 30, 1997. The audit covered salaries, benefits, and production incentives paid during the year that were approximately \$27,245,826; \$8,792,535; and \$1,509,898 respectively.

The audit concluded that the IPSC policies and procedures on salaries and benefits were proper, accurate, and in compliance with company regulations, labor agreements and government regulations. Further, the auditors said that their review of the IPSC Production Incentive policies and procedures indicated their propriety, equitableness, and reasonableness.

**Governor's Award** — This year the award was divided into different levels. IPSC was awarded the Silver Level Award for its work with an aggressive return-to-work program based on medical evaluation and physical fitness as a preventive as well as a rehabilitation program.

**Number of Employees** — At its peak, the IPSC work force numbered 617. Through planned attrition, the staff was reduced to 552 by the beginning of this fiscal year. By the end of the year staffing was at 478, due principally to the workforce reduction program described above.

## **IPA**

**Financing** — June 30, the current weighted average borrowing cost was 6.20 percent. A Bond Retirement and Financing Account (BRFA) was established and deposits to date total \$366 million.

The savings that resulted from financial activities during the past year totaled \$268.5 million or annual savings of \$14.8 million. In addition to lowering IPA's overall cost of borrowing, which is now down to 6.20 percent, the focus of this year's financial activities was to prepare to retire debt in advance of scheduled maturities. Monies from

operating surpluses and releases from various reserve funds were deposited into the Bond Retirement and Financing Account (BRFA) to be used for early debt retirement and related expenses.

## 1998 — A Year of Record Performance

### IPSC

**Production Incentive Program** — IPSC employees earned 97.36 percent of targeted goals for an award of 4.87 percent of their annual base wage this year, the highest percentage earned to date.

**Accounting Team** — The Accounting Section became the latest group to move to a team concept. This step involved the Accounting Analysts and the Accounting Clerks. The group has worked together well and has a strong commitment to make the team concept work.

**Work Force Reduction** — The last five employees to take the work force reduction either as enhanced retirement or incentive severance left employment with IPSC in May and June. A total of 76 employees left employment with IPSC.

**Target Zero** — In December of 1997, a concept was introduced to help complement the START (Supervisor's Training In Accident Reduction Techniques) Program. This concept involved catching a vision, communicating expectations, and establishing goals/targets. It is known as "Target Zero" and since the implementation, lost-time injuries and the number of minor injuries were significantly reduced. From December of 1997 to September of 1998, IPSC employees had five months with Zero OSHA Recordable injuries. The other months there was a total of seven OSHA Recordable injuries. This is a reduction of 59 percent, or 10 OSHA Recordable injuries, compared to the same time period last year.

**Safety Recognition** — On September 27, 1998, IPSC employees passed the one-year-without-a-lost-time-injury mark at IPSC. A celebration was planned which included the recognition of every employee for doing their part in hitting the "Target Zero" goal.

The community participated in this celebration by donating prizes that were given away in random drawings. On Wednesday, September 30, 1998, every employee was notified in their paycheck of the Corporate Safety Award, a 72-Hour Emergency



In recognition of one year mark without a lost time injury every employee received an Emergency Survival-Pak.

Preparedness Kit, that was being assembled for them. On Thursday, September 31, 1998, the final day of the week-long celebration, employees were asked to "Internalize the Target" by partaking of custom-made target-shaped cookies throughout the day. Over 1,000 targets were happily consumed.

The next long-term target being aimed at is to continue our performance beyond the all-time record set many years ago of 497 days without a lost-time injury. The target date is February 5, 1999.



Leslie Rasch newly hired Occupational Health Nurse.

**Occupational Health Nurse** — An evaluation was done this summer resulting in a new position for an Occupational Health Nurse. The position was filled on August 31, 1998. The timing of this move was motivated by the expiration date of September 1, 1998 for the existing medical services contract with Healthworks. In previous years, these services were contracted with various medical service groups.

The evaluation of the outside bids to contract these services led to the conclusion that it would be better to

handle it in-house. This decision did not lessen the level of service that we could provide and it did give us better control on how the medical services would be provided.

This new approach has the nurse reporting to the Manager of Safety/Training. A contract was awarded to Dr. N. Dwight Williams to serve as the Medical Control Physician who directs the clinical care and the EMT Program in place at IPSC.

**Computerized Maintenance Management System** — During the past fourteen years, the Software Development Group has made significant changes to the original MPAC System as approved by IPSC Staff. For example, the entire 1400 programs were re-written using Ardent's Universe database manager and BlackSmith's application generator to be Year 2000 compliant. This project began in October of 1992 and was completed in July of 1998 requiring some 32,000 person-hours to complete. The system has been renamed and is now known as TIMS (Total Integrated Management System). The System's database increased to 4000 megabytes in 1998. The TIMS application is used in the operation and maintenance of industrial equipment and is comprised of some 1400 individual programs. TIMS design electronically ties together four primary areas of operation. They are: **Maintenance/Planning, Warehouse, Accounting, and Purchasing.** Other smaller modules include Payroll, Industrial Relations, General Ledger, Tool Control, Material Safety Data Sheet (MSDS),



Electronic Time Sheet, and Salvage Control. Electronic transfers are being completed to the Putnam 401K investment plan and direct payroll deposits to Zions Bank.

This is the only software application used by every employee on site. TIMS has been electronically integrated with the optical disk Imaging System. Utilizing Computer Output to Laser Disk (COLD) and TIMS, improved the ability to capture information without the manual process of scanning.

**Plant Information System** — The Plant Information (PI) system consists of a DEC Alpha 2100, two micro VAX 4100, and two Alpha 3500 computers. The main PI software, or "PI Home Node," resides on the Alpha 2100. It collects and archives field data from 37 Modicon 584 systems in the outside areas, and the Foxboro systems in the power block. The PI software was purchased from Oil Systems Inc. (now OSI Software). It tracks over 23,000 data points for users to view on graphical displays, trends, calculations, and reports. Approximately 18 months of historical data is available on-line.

**Safety Maintenance Tagging System** — A new and improved tagging system went live. It is called Visual Tag-Out (VTO). The previous system was found to not be Year 2000 compliant. The VTO system is used to request, conflict check, issue, and track safety and maintenance clearances and tags at IPSC. Since implementation, General Physics Corporation has purchased the VTO product and they have assumed software maintenance responsibility for IPSC.

**The Year 2000 Compliance Testing** — Inventory of computer systems and electronic devices is 95 percent complete. The assessment and testing is about 75 percent complete with a completion date of November 1, 1998. Critical process systems tested included the Foxboro CCS (Coordinated Control System), GE TGSI, GE TAC, RIS sequence of events recorder, Bailey Net-90 Burner Management System, Modicon programmable logic controllers, Foxboro information computer, PI plant information system, and all Converter Station systems and others. Only a few minor problems were found. Additional testing of the Unit 2 control systems is scheduled for the spring outage in 1999 with the unit on line.

Remediation efforts are about 65 percent complete. Some of the items which are not yet Y2K ready are: The Fuels Management System, Loveland Instrument System, Enteck Vibration monitor and data base, AGEMA test equipment, CEM server computer, Dionex water lab chromatograph, AA fuel lab spectrograph software, Wonderware process information software, Novell LAN software, and FYI software. Most of these items will be corrected by purchasing new software versions or new hardware. The FMS system will be rewritten on site.

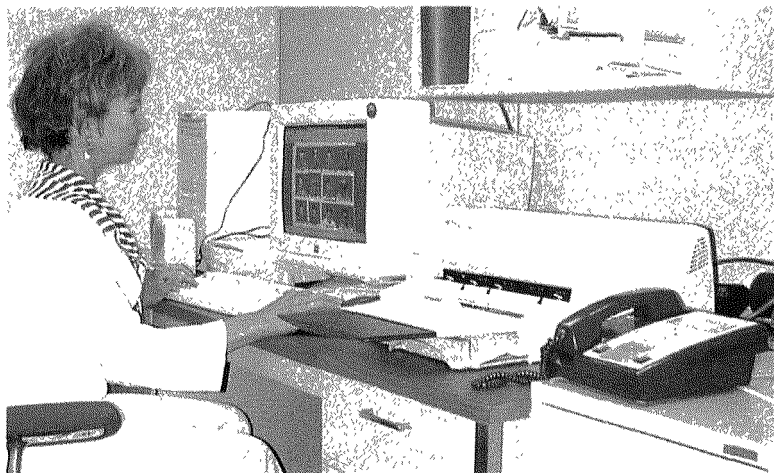
To date approximately 284, Y2K warranty letters have been mailed to IPSC's critical business partners inquiring as to their Y2K readiness. Approximately 50 percent have

responded with varying degrees of readiness. Most say they are "working on it, and will be ready."

Plans are to have all on-site systems Y2K ready by July 1, 1999. This will provide a six-month window to monitor and test the systems to ensure compliance. To date approximately \$3.2 million has been spent. An additional \$890,000 is estimated to be spent in bringing the remaining systems into compliance.

One of the main objectives remaining is to develop contingency plans for each business unit. These plans are necessary to ensure strategic operational continuity. They will include steps to be taken in the event operations are disrupted by either IPSC or external supply-chain interruptions associated with Y2K.

**Electronic Office** — The combination of GroupWise and WordPerfect along with the other suite of applications from Corel, make up the majority of IPSC's office automation software today. This combination has been highly effective in providing word processing, scheduling and calendaring, and continues to assist in automating IPSC's workforce.



Elaine Brown working at a computer station which utilizes GroupWise and WordPerfect.

Thousands of messages are sent in this system every day as well as standard interoffice memos, conference room schedules, and media resource schedules. These are all accomplished without using paper or manual filing. Documents are filed, searched, and managed through this system for ease of retrieval and storage.

**Generator Stator** — GE performed a follow-up warranty inspection on the Unit 2 Generator and found a leak in the collector ring which was not included in the scope of the original global epoxy repair. IPSC decided not to repair the collector ring leak, but would monitor the leak until a repair is justified.

**High Energy Piping** — The inspection plan was completed in the spring of 1998.

Future plans for the critical piping include as-found stress analysis of the main steam and hot reheat piping, which will allow us to stream-line the NDE on these lines. As the plant gets older, condition assessment, and creep analysis will become more important.

The base-line data gathered in the early years of operation will be extremely important to us in this effort.

**Programmable Logic Controller** — Four (4) Scrubber Modules and one (1) Fabric Filter Casing have been retrofitted to date, with four (4) more systems scheduled this year. These new systems have worked excellently and helped in the availability of each system they control.

**Supplemental Maintenance Services Contract** — The Supplemental Maintenance Services (SMS) contract was developed to ensure an adequate manpower resource regardless of the required work scope during outages or other emergencies. With the natural aging of plant components and continuous reduction in full time staffing, the amount of priority work per employee has steadily risen. With the current lack of any additions and betterments construction support and a work force of 473, a method of readily supplementing the maintenance workforce is required. This is particularly true during scheduled outages each year.

The Supplemental Maintenance Services contract is designed to provide a variable sized work force to assist with maintenance during both scheduled outages and emergencies. Outage work plans are developed to utilize every full time resource on the more sensitive maintenance functions where extensive training is required. SMS personnel are utilized to fill in on large maintenance issues where training requirements are minimal. Examples of jobs on which the SMS contractor has supplemented IPSC personnel are:

1. Baghouse Bag Replacement
2. Scrubber Spray Piping Removal and Re-installation
3. Boiler System Access Scaffolding

As noted in the examples above, two of these three recent issues in which the SMS contractor was involved are issues associated with the natural aging of the plant. IPSC fully anticipates that the SMS contractor will be a valuable resource to address general maintenance issues associated with equipment rebuild and restoration well into the future.

The SMS contract has been established with a three-year term. One additional year is specified as an option to be exercised by IPSC. The contract includes full rights for IPSC to terminate the contract, with no penalty, at any time. The contract will be competitively re-bid in the fall of 2000.

**Rotary Plow Feeder Redesign** — Rotary Plows 7A & 7B were modified with electronic power and control systems during this year. Three of the four plows in active reclaim have now been successfully modified.

**Fuels Management System** — The Fuels Management System was determined not to be Year 2000 compliant. A study was conducted to determine possible alternatives. An off-the-shelf product was available; however, the costs were too high. An option of having the IPSC computer personnel design the new system was proposed and accepted. In the interim the computer located in Los Angeles was relocated to Intermountain Generating Station. The project to write a new FMS system is underway with a completion date of August 1999.

**Governor's Award** — IPSC was awarded the Gold Level Award and was recognized for:

1. Its work with employees and family wellness.
2. Its actions for preventive fitness for all employees.
3. Work with rehabilitation and return to work of injured employees.

**Number of Employees** — After the workforce reductions the employee count is expected to level off at about 475. Each time there is a termination, the empty position will be looked at carefully before a decision is made to fill it or to leave it vacant. Part of the review will include the ability to have other employees cover the essential duties, and what kind of response time or support will be lost if the job is not filled.

## **LADWP**

**Work Force Reduction** — After a break of several years, the Department of Water and Power implemented a Staff Reduction Program for about 2,000 positions.

**Operating Agent Message** — It was reported that while 1997-98 was a record year of performance, safety, and cost savings for the Project, through November, in the 1998-99 fiscal year, "we are outperforming last year's results in nearly all areas: Over one year without a lost-time accident, Equivalent Availability is 99.92 percent, Net Capacity is 98.14 percent, and the Forced Outage Rate is 0.12 percent." During 1997-98, over \$5 million in cost savings was attained as a result of the Predictive-Preventive and Sectionalized Maintenance programs. Additionally, operating costs have been offset or lowered as a result of the sale of fly ash (the waste product of the emissions reduction processes) continued improvement in the Station's heat rate, and the trucking of limestone to the plant from a local supplier.

## **IPA**

**Financing** — June 30, the current weighted average borrowing cost was 6.04 percent.

**Reece D. Nielsen 1925-1998** — On November 18, 1998, Reece D. Nielsen, IPA's Board Chairman for nearly 20 years, passed away suddenly at the age of 73. Reece was a leader in the creation of the Intermountain Power Project and dedicated his time

and energy to the municipal power industry for many years. During his lifetime he served as Mayor, City Councilman, Chairman of the Power Board, and Chairman of the Planning and Zoning Commission in his hometown of Hyrum, Utah. He served on the Boards of American Public Power Association (APPA), Intermountain Consumers Power Association (ICPA), and Utah Association of Municipal Power Systems (UAMPS) as well as various community boards and associations. Reece served as the chairman of the IPSC Savings and Retirement Committee.

## **Other**

**School-to-Careers** — The high school in Delta has been working with a new state-wide plan to place high school students in work situations. The goal is to have the students gain some work experience beyond the traditional class room. The school-to-careers program works with employers to provide high school students with a learning opportunity. When a student's learning desires and an employer's ability to offer work are compatible, the student can be placed in a job for several hours a day. This can last for several quarters of the school year. The power plant has been an ideal location for many students; they can learn such things as office equipment, welding, mechanical, electrical, and computers.

## 1999 — End of the Century

### IPSC

**Water Suits Settled** — The final plaintiff that had filed suit over the flooding from the 1983 and 1984 high water years had his claims dismissed in 1994 and had appealed to the Utah Supreme Court. In February the Supreme Court of Utah upheld the trial court's ruling and closed all of his claims. One final appeal to have the Utah Supreme Court reconsider the case can be made. It is unlikely that the court will change its position since the decision was unanimous.

**Rotary Plow Feeder Redesign** — The first rotary plow in the coal unloading facility has now been successfully modified. Completion of this plow (1A2) brings the total of plows modified to four.

**Production Incentive Program** — IPSC employees earned 92.6 percent of targeted goals for an award of 4.63 percent of their annual base wages this year, this is the third year in a row that the award was over 90 percent of the available incentive goal.

**Fuels Management System** — The Fuels Management System (FMS) went into production on October 12, 1999. It is a Year 2000 compliant application. The application is similar to the TIMS computerized maintenance management system, but is not integrated with it. The application resides on a DEC ALPHA 4100 minicomputer using Windows NT as the operating system with UniVerse as the database manager. The application has the option of operating in a character-based or Windows graphical interface mode. It is currently running in character-based mode.

IPSC software design personnel interviewed all of the FMS users to determine the design of the system. An inventory of the equipment used by the coal mines and LADWP was completed to determine any special software or hardware needs. Most of the hardware and communication issues have been resolved, although some problems exist due to inadequate communication lines to the coal mines. The individual coal mines will have the responsibility to upgrade these lines. IPSC sent computer personnel to LADWP and the coal mines to set up and configure the computer systems and to provide user training.

The FMS application consists of 118 screens. Modules include Coal Contract Information, Scheduling, Ship Weights/Analysis, Invoicing, and Reporting. The system users include six coal mines, one rail carrier, LADWP, Intermountain Railcar, and the Intermountain Generating Station. The design amounted to about 40,000 lines of code.

The cost for an off-the-shelf fuels management system was estimated at \$1,000,000. The cost for IPSC to program the application amounted to \$150,000. Enhancements to the system will be approved by the President and Chief Operations Officer at IPSC.

**Toxic Release Inventory** — The Environmental Protection Agency (EPA) has for the past ten years required manufacturers to report on the release of toxic chemicals. The Community Right to Know program, as it has sometimes been called, was changed recently to include electric utilities. This change requires IPSC to report on things such as combustion byproducts, landfill sludge, chlorine, ammonia, mercury, and stack emissions. The report on this information is called the Toxic Release Inventory (TRI). IPSC was notified that its first reporting year, would be for the year that ended on December 31, 1998. The report was submitted to EPA on June 30, 1999. For this first reporting year, IPSC showed a toxic chemical release of 1.8 million pounds. While this may sound like a large volume of material, it needs to be considered in the context that 93 percent of the total is disposed of in an approved on-site land fill in a manner that is considered permanent disposal. The reports submitted to EPA become part of the public record, and thus the information is available to any one who wants to look at it.

To help community leaders and employees understand the TRI program, educational meetings were held and tours of the Project given. By addressing the issue at this time, the local community will have a background to understand the information when it is released by EPA in some future report, or when a news program presents headline type information with little or no explanation of the rest of the story.

**Environmental Release Risk Management Plan** — The required Risk Management Plan (RMP) was submitted to the EPA prior to the due date of June 21, 1999. This plan addressed the worst case scenarios of releases of certain chemicals above designated threshold quantities on site. The only chemical on site which met these threshold criteria and were required to be addressed in the RMP was chlorine. As required by the RMP rules, this plan was shared with the local emergency response organization, which in our case includes the Millard County Sheriff's office. One advantage of our remote location was that no public receptor or facilities would be affected in a worst case catastrophic event.

**EPA Mercury Emissions Test Project** — The EPA is conducting an information collection effort on the amount of mercury that utilities emit. This effort includes three parts. The first part was an information form that all utilities had to submit; the next part required all utilities, which produce more than 25 MW and burn coal, to sample the coal they use for the 1999 calendar year; and the last part required certain utilities that were randomly selected to conduct stack testing for mercury.

EPA is requiring IPP to participate in all three parts of this study. Information on the chemical components of the coal received is being collected by the Project as required by EPA. This information will be submitted to EPA on a quarterly basis. Currently, for the first two quarters, every sixth train of coal received would be sampled for mercury and the other components required by EPA. The results have been accurate enough after two quarters so that the frequency will be less often than every sixth train for the third calendar quarter. A contractor was selected to conduct the stack testing for mercury, which will be done during October of this year. A stack testing plan and



quality assurance plan were submitted to EPA by June. Our preliminary calculations indicate that the Project emits a maximum of about 300 pounds of mercury per year. EPA estimates that utilities emit over 50 tons of mercury per year nationwide.

**Wellness Program** — An Internet web site was created to keep employees and spouses informed regarding the Wellness Program and its activities. A trial period was established to see if there was enough interest in the web site to warrant keeping it on a long-term basis. During the initial trial period, the web site received just over 40 hits from employees and/or their spouses. Based on this information, a decision was made to maintain the web site as long as it could be deemed worth while. The address established was [www.ipsc.netoffc.com](http://www.ipsc.netoffc.com).

With implementation of the web site and a concerted effort to encourage employees to participate in the health and general well-being activities sponsored through the Wellness Program, our employee and spouse participation rate increased four times. The good news is that these increases were in all areas of activity and programs. This should result in a healthier work force and healthier dependants, which will help contain expenses for health care and medical expenses.

**Governor's Award** — IPSC was awarded the Gold Level Award for a second year. The award recognized the ongoing program of IPSC to develop workplace fitness programs that help prevent injuries and early return to work when possible.

**IPSC News and Information Center** — A new program designed to strengthen the lines of communication between management and employees was started in September. This provides a system of communication posters which points out current news, employee messages, goodwill motivators, holiday-event reminders, and inspirational quotes. When employees stop to read the messages, they are also exposed to other posters that management feels need to be promoted or reviewed. These posters are changed on a regular basis to keep the information fresh and employees interested to see what the next subject of discussion will be. This new communication program also includes a feedback system. Employees are encouraged to send their comments to top management by using the "Direct Line." This is a brief memo where employees can express their ideas or concerns to be reviewed by top management. Signed messages will receive a personal response. Unsigned messages will be looked at and may be given some consideration. All employees are invited to constructively use this "Direct Line."

**Number of Employees** — The number of employees is 473.

## **LADWP**

**Operating Agent Representative** — As a result of the retirement of Mr. Charles L. DeVore from Los Angeles Department of Water and Power, Mr. Michael J. Nosanov

was assigned the responsibility of serving as the Intermountain Power Project (IPP) Operating Agent representative, and to replace Mr. DeVore on the IPP Risk Management and Audit Issues committees.

## IPA

**Financing** — June 30, the current weighted average borrowing cost was 5.41 percent.

## Other

**Industrial Services Group (ISG)** — The Industrial Services Group (ISG) purchased the Pozzolan Company. The new organization ISG, kept the Pozzolan employees and upgraded the storage silos that had been built on the plant site for the storage and loading of the flyash material. With the improved material handling facilities the new company will take as much quality flyash as IPSC will allow them to take.



ISG Storage tanks for flyash material.

## 2000 — Building a Firm Foundation for the Future

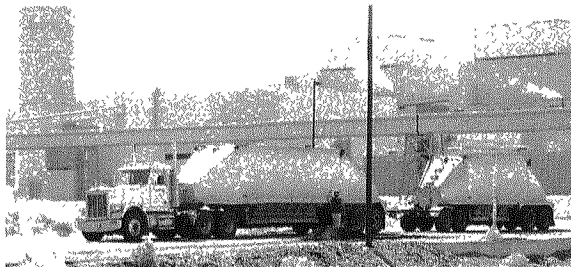
### IPSC

**IGF Generation Records** — The Intermountain Generating Station started out on a record production pace in 2000. January 2000 was the highest gross generation of all time at 1,285,314 MW hours (surpassing the December 1997 mark of 1,284,692 MW hours).

**Truck Coal Deliveries** — Trucks hauling coal are to deliver 275,000 tons to the plant in the last quarter of the year. The coal trucks started delivering at IGF October 1, 2000. To date, the coal has all come from ARCH and has arrived from the Skyline mine. Cox Transport is hauling from Skyline and is expected to continue hauling through the end of the year. Coal from Skyline comes by way of Spanish Fork through Nephi.



Coal truck deliveries.



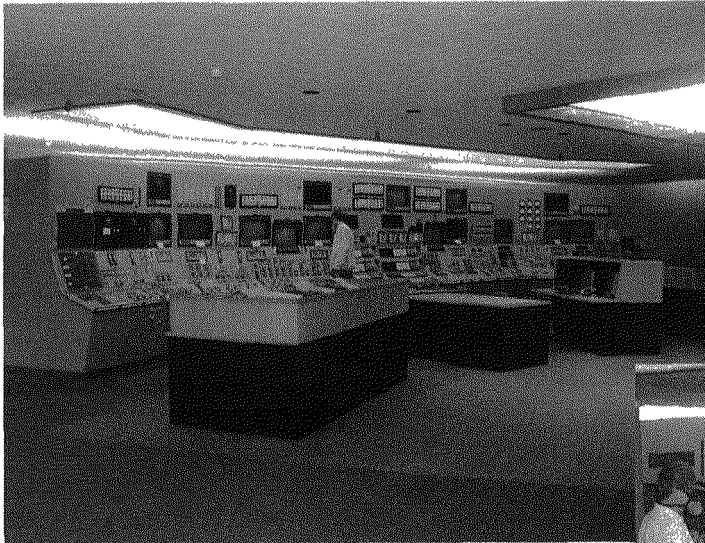
Coal truck making a delivery to IPSC.

Barney Trucking and Robinson Transport have also been hauling from the Deer Creek mine which is the mine located near the Huntington Power Plant. Coal from Deer Creek is coming by way of Salina-Scipio-Holden.

**Production Incentive Program** — IPSC employees earned 93.4 percent of targeted goals for an award of 4.67 percent of their annual base wage. This is the fourth year in a row the award was over 90 percent of the available incentive goal.

**Y2K Status** — Because of planning and lots of preparation work, the Y2K rollover was for the most part uneventful. Systems continued to operate through the critical period. Designated personnel were on site the evening of December 31, 1999, in the event that problems were to occur.

Early in January, several Y2K related problems were discovered. The medical log in the clinic would not function after the rollover. The database was rewritten. The payroll direct deposit would not communicate with the banks. This system was rewritten. The Converter Station Data Acquisition System had a minor glitch which was resolved and the Turbine Pedestal Monitoring System which uses similar software as the Converter Station also had a minor problem which has been resolved.

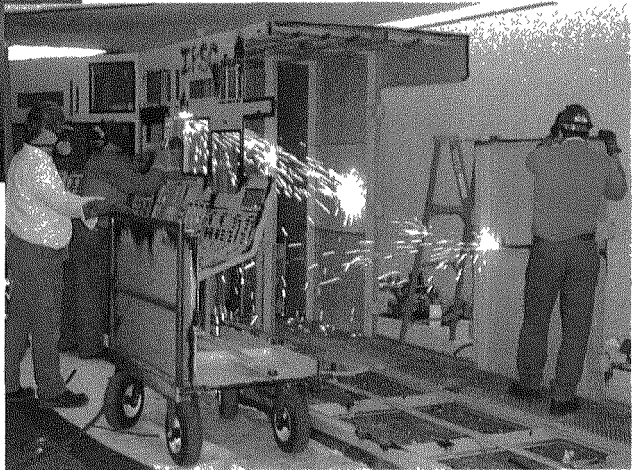


Simulator used as a training tool.

### **National Board "R" Stamp Program and Owner-User Inspection Program —**

IPSC secured certification from the National Board as an authorized "R" Stamp holder. This certification, coupled with certification as an Owner-User Inspection Organization allows IPSC to repair, alter, and inspect all ASME Code boilers, pressure vessels, and power piping at IGF.

**Disassembly and Removal of the Training Simulator —** The plant simulator was removed from the Administration Building during January 2000. Obsolete computer components made it impossible to keep the system functioning and a complete system upgrade was cost prohibitive.



Demolition of the Simulator Room.



Employees being trained to inspect for "R" Stamp Program.

The expertise to conduct repairs to pressure parts has been available within IPSC from the beginning of the project. However, the new programs provide better guidelines to the craftsmen for making these repairs and requires better documentation and tracking of all aspects of a repair job. The IPSC Maintenance Department has recently created a new classification for mechanics who have the skills to perform as "high-pressure welders." This new classification required all existing welders to be retested and recertified to prove they meet the stringent requirements of IPSC's written program.

IPSC Engineering Services has taken on the responsibility to act as Quality Assurance for all repairs or alterations performed at IGF. These responsibilities include

engineering design, material specification, procedure specification, materials receiving inspections, hydro-static testing, and Quality Assurance at the job site of each repair. The responsibility for documenting each repair and reporting to state authorities rests on Engineering Services.

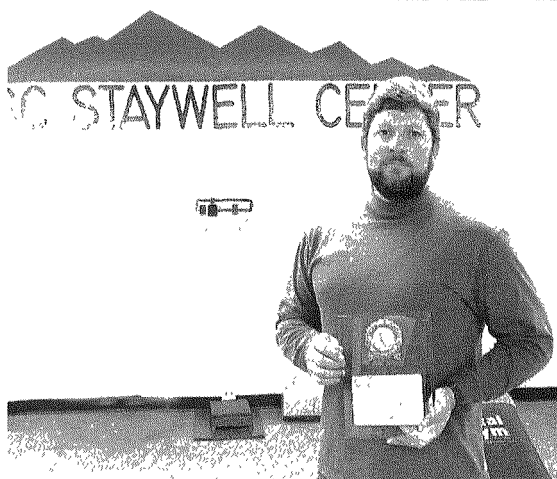
To accomplish this increased scope, personnel have received additional training and certification as National Board Inspectors, Certified Weld Inspectors, and Level II NDE certification in dye penetrant and magnetic particle testing procedures.

In addition to acceptance inspection of Code repairs and alterations, the IPSC Owner User Inspector saves thousands of dollars each year by inspecting boilers and pressure vessels on site and securing the necessary operating permits. Without this service, IPSC would have to contract with state inspectors to perform these duties.

The ability to respond to an equipment break down is critical in the daily operation of a power plant. The new "R" Stamp Program allows IPSC to properly respond to a planned outage and an emergency. When an emergency does occur, the down time or the amount of time that electricity is not being produced is kept to a minimum by being able to have our employees respond immediately. The financial reward for having such a program is the high level of availability and reliability that results in a positive cash flow for the project.

**Radian Fertilizer Project Evaluation- Pet Coke Test Burn** — A Phase II second test burn started May 15, 2000, with a two week baseline test. The 20 percent pet coke blend was burned in Unit 1 for approximately two and a half weeks. The main purpose of this test was to document the level of nitrous oxide and sulphur dioxide emissions while using pet coke as a fuel.

**Scrubber Module Corrosion and Cladding Project (Status)** — The scrubber cladding project began on March 15, 2000. With the completion of Unit 2 "F" module, on November 12, we passed the halfway mark on our schedule. In slightly less than eight months almost 2200 square feet of corroded steel has been replaced. This has included an almost total rebuild of the inlet area on several of the modules. After repairing the substrate steel, the latest welding technology was used to weld in place more than 8100 square feet of 1/16" thick, high nickel alloy (Hastelloy C-2000) plates. In doing so, the welders have laid down more than two miles of Hastelloy weld seams and every seam has been vacuum tested for leaks.

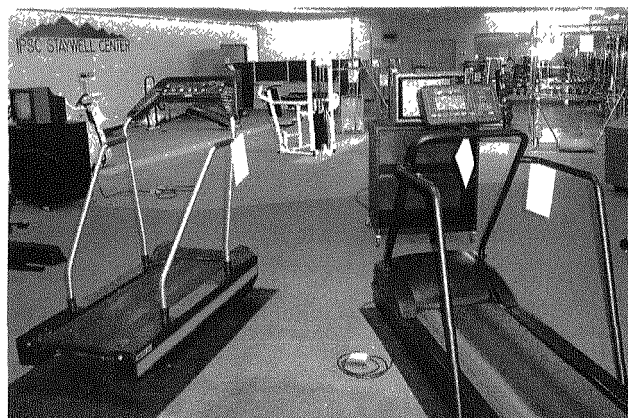


Brian Coles holding the Safety Recognition Award.

**Workplace Safety Award** — On June 19, 2000, IPSC received recognition from the Utah Labor Commission for "Excellence in Safety Programs." A plaque was awarded to IPSC for its workplace safety programs. IPSC was selected as the recipient in the Self-Insured Employer category. This was based on documented workplace safety policies and procedures, staffing, ratio of claims to payroll, and ratio of claims to employer. This award reflects the effort of each employee and is one that they can and should take credit for.

**Corporate Safety Recognition Award** — On August 13, 2000, IPSC achieved one full year of work without a lost-time injury. Each employee received a long sleeved denim shirt for doing their part.

**Staywell Program Improvements** — The Staywell Program received a face lift in the year 2000. With the dismantling and removal of the simulator, IPSC made the decision to move the exercise and weight equipment. It was moved from its location in the Community Center into the simulator room in the Administration Building. The goal is to provide easier 24-hour access to employees. Thus allowing employees to take full advantage of flex-time options, before and after work periods, and ease during break and lunch times in using the equipment. Included in this area is a video aerobics room, where classes can be taught or videos viewed to perform different exercise programs. There is a resource center located at the west end of the Center where employees may read or take pamphlets, as well as other health and wellness literature made available by various organizations such as the American Cancer Society and American Heart Association, etc. This change also included relocating the Health Analyst into the room next to the Staywell Center so employees have better access to health and fitness services.



Staywell exercise center for staying in shape.

**Number of Employees** — By the end of the year, the number of employees was 468.

## **LADWP**

**Department of Water and Power's 2000 Integrated Resources Plan** — In August, the Los Angeles City Council approved the Department of Water and Power's 2000 Integrated Resources Plan, a sweeping 10-year expansion program. The plan calls for a \$1.7 Billion investment to finance 2,900 megawatts (MW) of repowered in-basin power generation including new renewable sources of energy and demand side management. The plan focuses on improving reliability, lowering prices to customers and addressing environmental concerns.

## **IPA**

**IPA Student Achievement Awards** — During mid-May of each year, IPSC awards (for IPA) eight high school student achievement scholarships at eight different area high schools. This is a \$500 cash award to be applied toward college expenses.

**Financing** — June 30, 2000, the current weighted average borrowing cost is 5.38 percent.

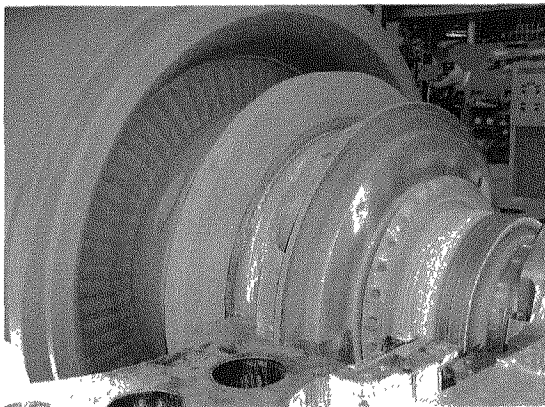


## 2001 — First Look at the Possibility of Building Unit III

### IPSC

**Filter Bag Replacement Program** — The five-year job of replacing all the bags in the baghouse started in May 1996 and ended in March, three months ahead of schedule. This replacement job was one of the largest on-going jobs undertaken by IPSC employees.

Each baghouse consists of three casings, with 16 fabric filter compartments per casing. Each compartment contains 396 of the 12-inch diameter, 32-foot long bags. That makes 19,008 bags per unit—38,016 bags total for both units.



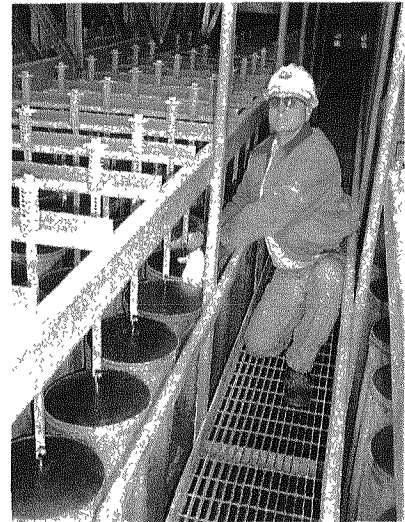
Turbine Upgrade.

**Plans to Upgrade Unit I and Unit II High-Pressure Turbine** — For over a year, activities have

been moving forward with the planned installation of the High-Pressure Turbine retrofit them during the next major planned outages. A contract was signed with Alstom to manufacture the new turbine inner shell and rotor. The new High-Pressure Turbine has the potential to add up to 75 MW of additional

capability per unit. This would allow the project to generate a gross capacity of approximately 950 MW per unit. In order to achieve this additional load, other areas in the station will be upgraded, to achieve additional capacity, over the next two years.

**Change of Auditors for Saving and Retirement Plans** — The contract for auditing the IPSC Saving and Retirement Plans was rebid for the first time in 16 years. Since the plans were first funded, the firm of Coopers and Lybrand had been performing the audits. Coopers and Lybrand later merged with Pricewaterhouse. The new firm was called PricewaterhouseCoopers. Audits during these years were conducted as required by the Internal Revenue Service to support the filing of Federal Tax Form 5500. It was determined that a review of the cost of these audit services was in order. IPSC placed a request for bid for auditing services with local, regional, and national firms. Deloitte and Touche was selected as the new auditors.



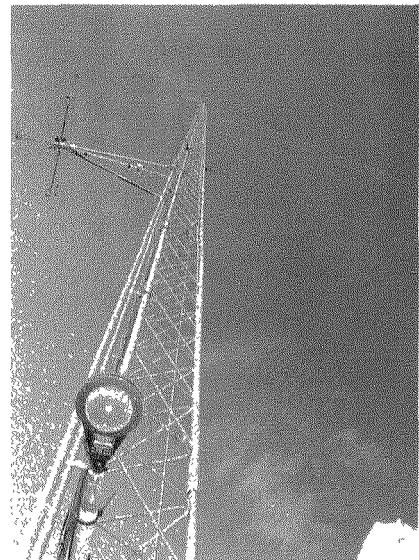
Employee replacing bags in baghouse.

**Two Groups of Laborers Hired** — Ten laborers were hired in May and thirteen laborers were hired in November.

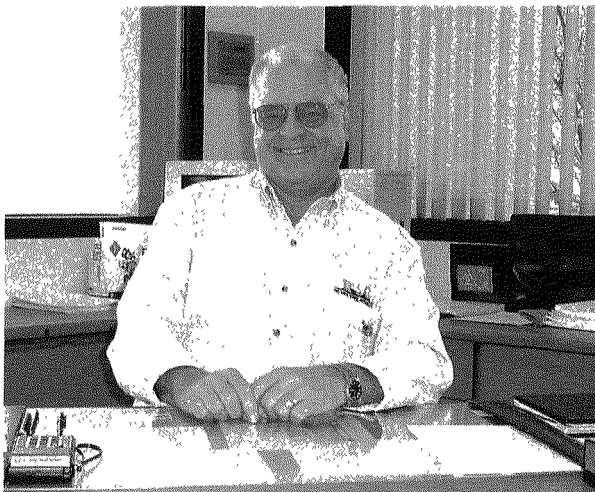
**Production Incentive Program** — IPSC employees earned 75.7 percent of targeted goals for an award of 3.78 percent of their annual base wage.

**Mutual Gains Negotiation** — A new labor contract was signed on June 21, 2001. A term of the new contract called for the parties to engage in a process called Mutual Gains Bargaining. The initial training took place in October. About two dozen hourly and two dozen salaried employees took part in the training sessions. Follow-up training will normally take place each week until all employees have a basic understanding of the Mutual Gains process. A labor management committee will meet to outline what happens next.

**Meteorological Tower** — Gathering meteorological data, which would be used to apply for various permits to build Unit III, was given a major boost when a tower was built to support the necessary equipment. The tower was built on the west end of the main work area. Approximately one year of data will be recorded and available for review by the approving governmental agencies before applying for a permit. Maintenance of the meteorological equipment and collection of the data is the responsibility of the environmental group. The data gathering is only one of many activities that will need to be done prior to making a decision to build Unit III.



Meteorological Tower.



S. Gale Chapman prepares for retirement.

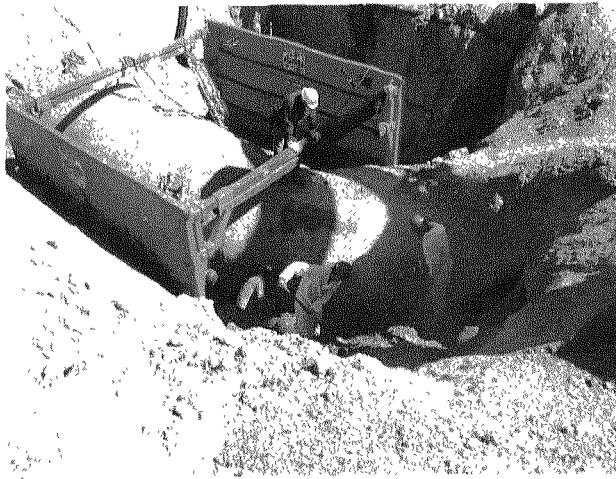
**Retirement  
of President  
and Chief  
Operations  
Officer**

— S. Gale Chapman, President and Chief Operations Officer, announced that he would retire at the end of the year. Since Mr. Chapman was the first IPSC employee, he has basically built the company from the ground up. This change in the top management position will be the first time, since he was hired in October of 1982, that someone other than Mr. Chapman has served as the president of IPSC.

**Annual Laborer Test** — The annual laborer test for 2001 was given the day after Labor Day on September 4. More than 300 people signed up to take the test. The actual number who took the test was 299 and, of that number, 49 passed. Some candidates from that group and some who were left over from the group last year were interviewed.

**Governor's Wellness Award** — The IPSC employee wellness program, Staywell, received recognition as one of the best programs in the state. The Governor's award recognizes three levels of participation and company effort, lowest is bronze, next silver, and the highest is gold. The Gold Level Award was presented to the program for the year 2001. This makes three years in a row that the program has earned the Gold Level Award.

**Cooling Water Pipeline Repair** — In the spring, a leak in the 84-inch water line used to re-circulate cooling water was discovered. Corrosion was determined to be the major cause of the problem. The corrosion was limited to about ten feet of pipe. The solution



Employees working on the Cooling Water Pipeline Repair

was to weld the full circumference of the pipe and reinforce it with bolted external steel bands coated with gunite. A mortar-coated steel elbow also needed to be repaired. A galvanic anode was installed to arrest corrosion on the steel elbow. These repairs were accomplished using the skills of IPSC employees. The repairs will ensure that the cooling water pipeline will serve as originally intended for many years to come.

**Number of Employees** — The number of employees is 492.

## LADWP

**Change of Leadership** — Recruitment for a new President and Chief Operations Officer started when Mr. S. Gale Chapman gave his notice of resignation to be effective the end of this year. The IPSC Board of Directors will interview candidates to select the next president.

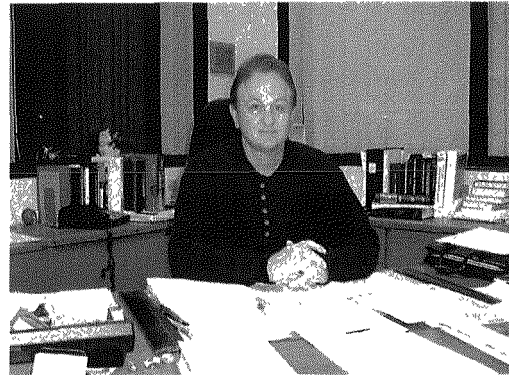
## IPA

**Financing** — June 30, the current weighted average borrowing cost was 5.18 percent.

## 2002 — A New President and a Year of Increased Generating Capacity

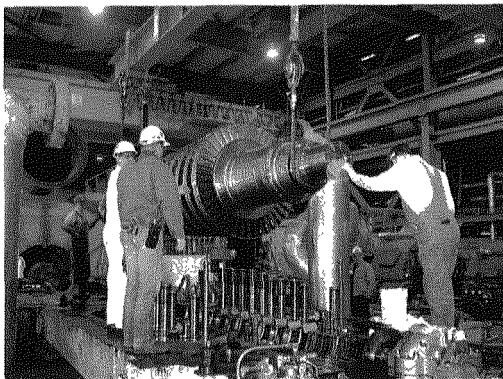
### IPSC

**New President and Chief Operations Officer** — George W. Cross was selected to replace S. Gale Chapman as the President and Chief Operations Officer of IPSC on January 31, 2002. Mr. Cross was serving as the Superintendent of Operations and Corporate Vice-President at the time of his new appointment. The process of selecting a successor for Mr. Chapman had been going on for about six months. When Mr. Chapman announced his retirement in mid-2001, the IPSC Board of Directors hired a recruitment firm to consider prospective candidates from across the country and to narrow the field down to a few finalists. They eventually presented five candidates to the IPSC Board of Directors for their final interview. Two candidates were from outside the IPSC organization and three candidates were current IPSC Department Heads. Following the IPSC Board of Directors' final interview, Mr. Cross was selected as the new President.



George W. Cross newly appointed President and Chief Operations Officer of IPSC.

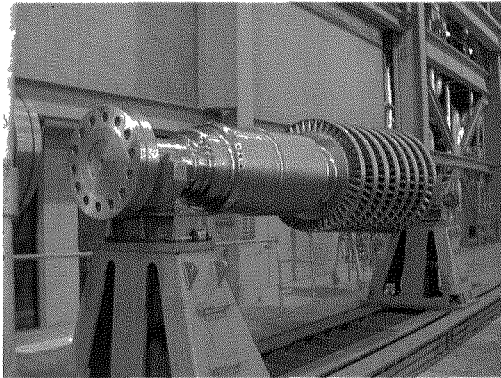
The appointment by the IPSC Board of Directors of Mr. Cross to the position of President and Chief Operations Officer required Mr. Cross to select a new Vice-President and a new Department Head for Operations. Mr. Dennis K. Killian was selected to serve as the new Corporate Vice-President and Mr. Joe D. Hamblin was selected to serve as the new Superintendent of Operations. The position Mr. Hamblin had served in, Converter Station Manager, was eliminated. The Converter Station was placed administratively under the Operations Department. This new organization change allowed Mr. Hamblin to continue to supervise the Converter Station.



Employees installing high-pressure turbine.

**Turbine Upgrade** — The high-pressure section of the Unit 2 turbine was replaced in the spring outage with a newer and more efficient turbine. The installation was the culmination of many months of work and planning. The manufacturer of the new turbine, Alstom Industries, has its sales office in Richmond, Virginia. The new turbine was fabricated in Rugby, England and then transported to Delta, Utah by ship and truck lines. During the regular biannual month-long

Unit 2 outage, the new high-pressure turbine was installed. This was a very demanding project. Alstom had questioned the ability of installing the new high pressure turbine in such a short time frame. IPSC demonstrated its dedication to the job by accomplishing



High-pressure turbine.

the installation on time. Normal outage repairs and upgrades to plant systems and equipment were also completed during the outage. Because of the expanded scope of the outage (replacing the turbine), many employees were required to work extra hours to accomplish all the planned work. The return to service of Unit 2, on time, was a major accomplishment, given the additional work of installing a new high-pressure turbine. As might be expected, some initial problems with getting the new turbine correctly balanced and running smoothly took a couple of days to resolve.

**Title V Operating Permit** — The original operating permit for the additional capacity gained by the new high-pressure turbine was approved by the state of Utah on January 19, 1998. That permit has been amended several times. The latest amended permit was approved on April 10, 2002, this allows IPSC to determine whether to operate at the same megawatts as before and use a reduced amount of fuel or to use the same amount of fuel and produce a greater amount of megawatts. Operating at the same amount of fuel allows IPSC to generate an additional 75 megawatts.

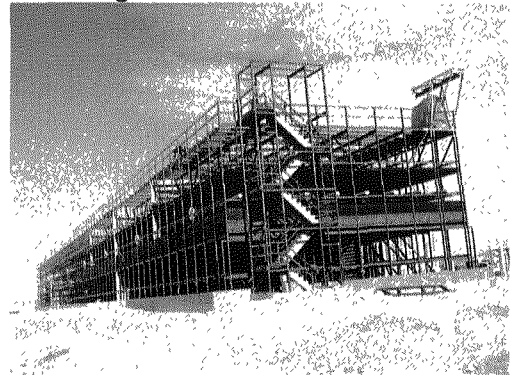
#### **Construction of Helper Cooling Towers —**

Construction of additional cooling tower capacity started in late summer with Weyher Construction



Helper cooling tower construction.

Company as the general contractor. The helper cooling towers will permit both units to run at an increased capacity.



Helper cooling tower rises above desert floor.

**Data for a Third Unit** — The process of gathering technical data to support the approval for a third unit continues to be a major duty of IPSC. A decision to build Unit 3 is expected in 2003 or 2004.



Pipe waiting for installation in helper cooling tower.



**Craft Specific Training** — This is the first year that the quarterly report that tracks training records of employees has been expanded to include "Craft" training courses. The results of the additional training and tracking capacity are used to monitor the progress of each employee toward their annual training and retraining requirements. The report is produced each quarter for the supervisors to see what has been done and what needs to be done.

**Dry Water Year** — The normal snow pack and water storage for the area of the Sevier River that serves the power plant is very low this year. This is the fourth year in a row of below normal snow/rain for the area. Water revenues from the water rental program have been good because the price of water has been higher than normal due to the normal demand and small supply of water.

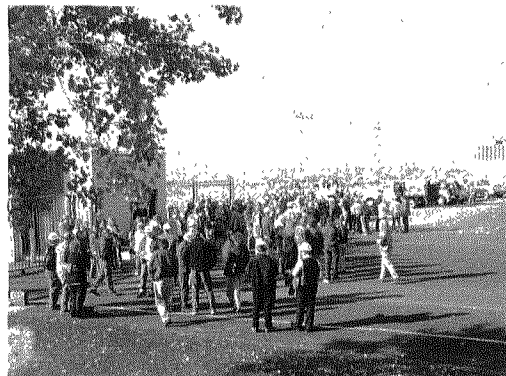
**IPSC Practice Evacuation** — On October 29, 2002 a plant-wide evacuation drill was conducted. This was done to help prepare everyone in case of a real emergency.

**Waste Water Holding Basin** — This basin required cleaning and removal of sediments that have



Waste water holding basin west side of power plant

collected over time. Water from run off and other sources is routed by way of ditches to the basin and if necessary is pumped into the basin to retain the solids and other wastes. The water from this basin is used as recycled make-up water for the Scrubbers. If necessary, the water can be pumped to the evaporation ponds. The basin serves as part of the zero discharge program.



Plant-wide evacuation. Employees by IPSC main entrance gate waiting for further instructions.

**Medical and Dental Insurance Rates Increase** — The renewal information from the medical and dental carriers show that we had a greater-than-expected usage of the plans, and with medical inflation, the cost of insurance for the year starting July 1, 2002 would require an additional 17 percent to cover the same expenses as last year.

**Power Engineering Magazine Article** — In the August 2002 edition, Power Engineering ran an article about the Intermountain Generating Station. A picture of George W. Cross, President of IPSC was featured with a story which describes the owners of the project, a description of the facility, and a list of some of the reasons why the project has been so successful. The story reported on the following areas: heat

rate improvement, capacity factors, cross-training, hiring history, staff walk downs to focus on keeping the plant clean, and operators hauling limestone.

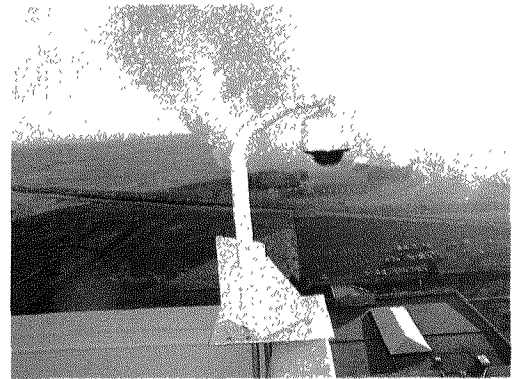
**Power Magazine Article Ranking Various Power Plants** — In the August 2002 edition, Power magazine ran an article that ranked coal-fired power plants rated 300 megawatts and above. The magazine has 298 coal-fired stations rated at 300 MW or above in its data base. In the article, the Intermountain Generating Station was ranked twenty-third in heat rate, fourth in capacity factor, and third in lowest SO<sub>2</sub> emissions.

**Electric Light and Power Magazine** — In the November 2002 edition, Electric Light and Power listed the project as the fifteenth most energy efficient coal-fired power plant, the eighth highest utilized plant, and the third cleanest plant ranked by SO<sub>2</sub> emissions.



Indoor monitors for security cameras.

**Security Cameras Installed** — Following the terrorist attacks in New York on September 11, 2001, some changes have been made to improve and upgrade the security at the plant site. One of the major changes was to mount cameras on the seventeenth floor of the units that permit a complete view of all approaches



Security camera in place.

to the plant and a good view of the plant site. Cameras were also mounted to observe entrance and exit through the guard gate and at the DMAD Pumping Station. The security personnel are able to have a constant view of the goings-on in and around the plant. The monitoring screens are located at the main guard post and in the Plant Manager's office.

**Scrubber Oxidation Air Project** — With the increased volume of gas, due to higher production capacity, comes a need to force additional oxygen through the scrubbers to improve the efficiency and effectiveness of the scrubbers. This new step requires air to be injected into the main stream flow of gases passing through the scrubber. Plans have been put in place to make the necessary installation.

**New Risk Manager** — Pat Finlinson was chosen to replace Lowell Curtis who retired in October 2002.

**October Record Month** — IPSC produced 1,300,450 gross megawatt hours in the month of October which was an all-time-high record for production.

**Start of Distributed Controls System (DCS) Replacement Project** — Finding replacement parts for the Unit Information and Control Systems has become harder and harder. The manufacture of the equipment installed at IPSC was discontinued ten (10) years ago. The plan for the replacement of these systems is underway, with the evaluation of data base requirements and the writing of specifications for the Request for Proposals (RFP). This project will take several years to complete.

**Rocks in the Coal** — The supply of coal that has been used by the units in the past has been some of the very best and cleanest coal available. Some of the coal we are now receiving, still falls within the specifications of the coal contracts, but it is not as clean or rock free as the coal of years past. The increase in the amount of rock means that more attention has to be paid to keeping the coal system running and the reject system running at its full potential to keep the rocks from getting into the pulverizers.

**Number of Employees** — By the end of the year, the number of employees was 489.

## LADWP

**New IPSC Board Director** — As a result of the retirement of Mr. Michael J. Nosanov from the Los Angeles Department of Water and Power, Mr. Eric J. Tharp was appointed as the Operating Agent Representative.

## IPA

**Business of the Year 2002 Award** — On November 13, Reed T. Searle and George W. Cross accepted the Delta Area Chamber of Commerce award to the Intermountain Power Agency for business of the year award. A leader in our community.

**Financing** — June 30, the current weighted average borrowing cost was 4.77 percent.



Reed T. Searle and George W. Cross accept the Business of the Year Award.



## 2003 — A Year of Increased Generating Capacity

### IPSC

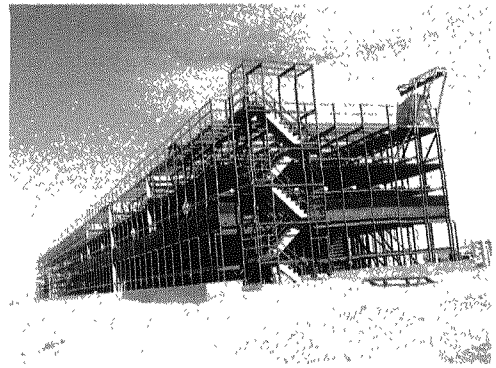
**Completion of the Helper Cooling Towers** — The new helper cooling towers provide IPSC with additional cooling capacity that will be used when Units 1 and 2 are utilized at their increased capacity.



Helper cooling tower construction.

The need for cooling is greatest during the warmer months of the year. The towers were tied into the cooling system

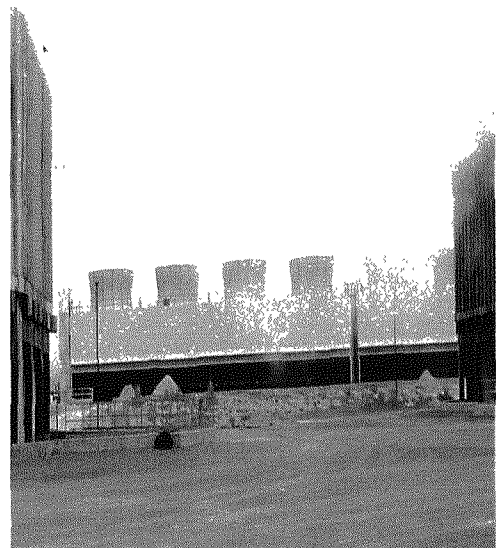
during the Unit 1 major outage in March. The month of July provided some above normal hot days; the helper cooling towers were put to good use and helped to reduce the back pressure on the units.



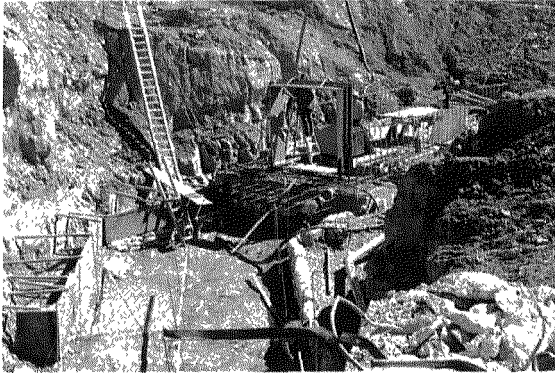
Helper cooling tower rises above desert floor.



Looking toward the on-site reservoir at helper cooling tower construction.



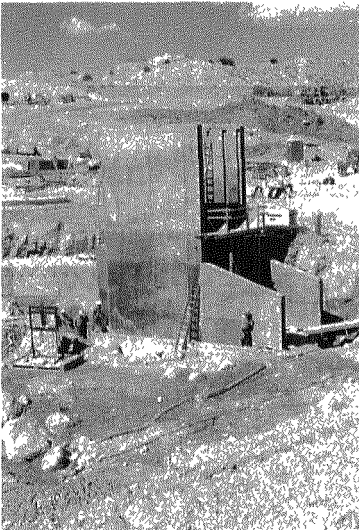
Helper cooling tower almost completed.



Construction of new outlet pipe.

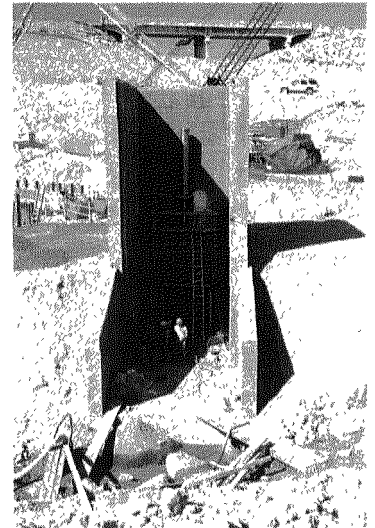
### **Dry Water Year and Water Reservoir Repairs**

— Most of the southwestern states continued with dryer than normal weather. For Utah, this is the fifth year of a dry cycle. The reservoir that holds water used at the power plant is the Sevier Bridge Reservoir (also called "YUBA" reservoir). The State Engineer issued Dam Safety Requirements that all water reservoirs must meet to continue in operation. To meet these



Tower outlet guard gate.

requirements some repairs and improvements were made to the Sevier Bridge Reservoir. The reservoir was drained during the irrigation season to allow work on a new outlet tunnel and new gates at the head of the tunnel. The reservoir dam itself was strengthened by adding material to ensure the dam would not leak or fail. Work started in August and was completed in November.

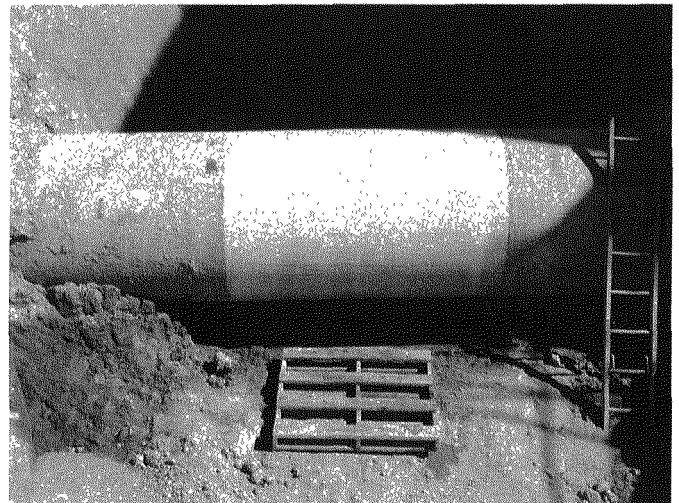


Tower outlet guard gate.

**On-Site Repair of Water Line Pipe** — The approximate four-foot diameter recirculating water line that transports water from the on-site reservoir to the solid contact units developed a leak. The first option to make the repair was to replace the damaged section of pipe. Replacing the pipe was planned to occur during either the minor or the major scheduled unit outages early in the year. When a replacement



Contractors fixing a leak in large pipe that comes from DMAD Reservoir.



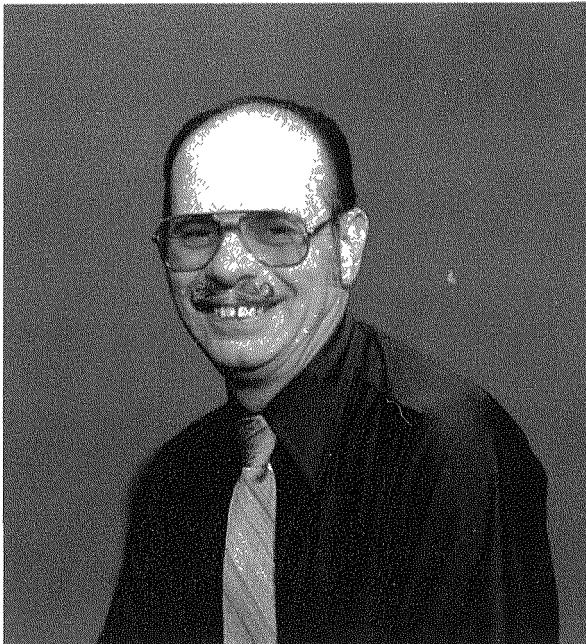
Completed wrap on pipe to repair leak.

section could not be located and the lead time to manufacture a section would not work with the schedule, a contractor was hired to repair the pipe. The work required a new protective liner inside the pipe and a new outer coating. The work was similar to repairing a broken bone. A cast was placed on the outside of the pipe to strengthen the outer shell and a new liner was installed.



Underground pipe being worked on to repair leak.

**Third Unit Steering Committee** — A report was published for prospective participants that provides material designed to allow the governing boards and bodies to determine if they want to be part of Unit 3. IPSC employees continue to support the work needed to complete the permitting process. The work of data collection, especially for the environmental permits, will continue through the year.



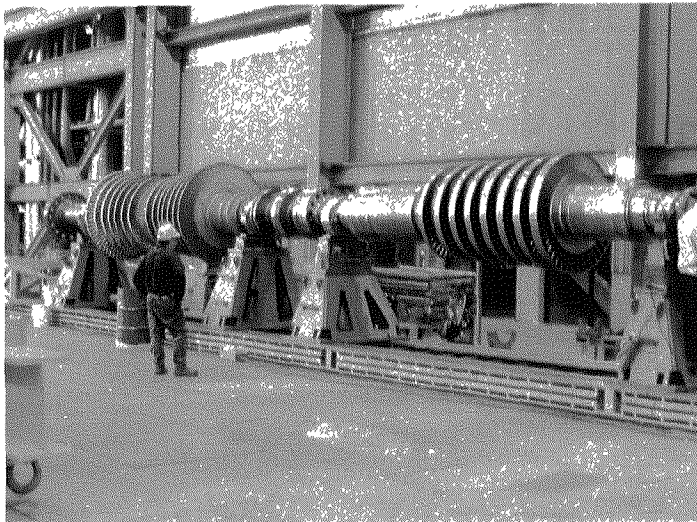
Robert A. Davis Retired, IPSC Operations Superintendent passed away February 3, 2003.

**Retired Operations Superintendent, and Corporation Vice-President, Robert A. Davis - Passed On But Not Forgotten —**

Robert Arthur Davis, age 68, passed away suddenly and unexpectedly Monday, February 3, 2003, at his home in Delta, Utah. Bob was born May 30, 1934 in Davenport, Iowa, to Robert Raymond and Nona Lucille Stevens Davis. He married Sandra Jean Buzick December 2, 1955, in Las Vegas, Nevada. Bob and Sandra were married for 47 years and had four children, ten grandchildren, and one great-granddaughter. Bob graduated from Redlands High School in 1952. He served for two years aboard the USS Calvert APA32 and took part in the Operation Passage to Freedom. He then worked at various steam plants for the next 42 years. His last employment was at IPSC where he

was the Vice-President and Operations Superintendent. He retired October 1, 1997.

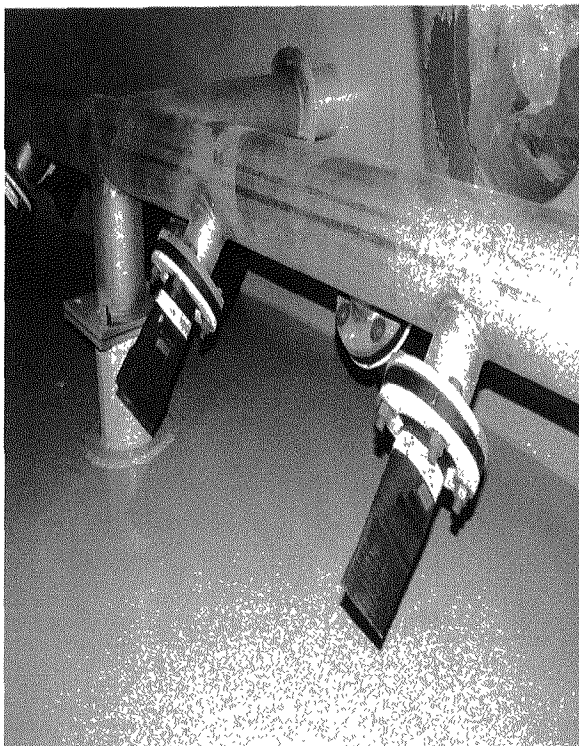




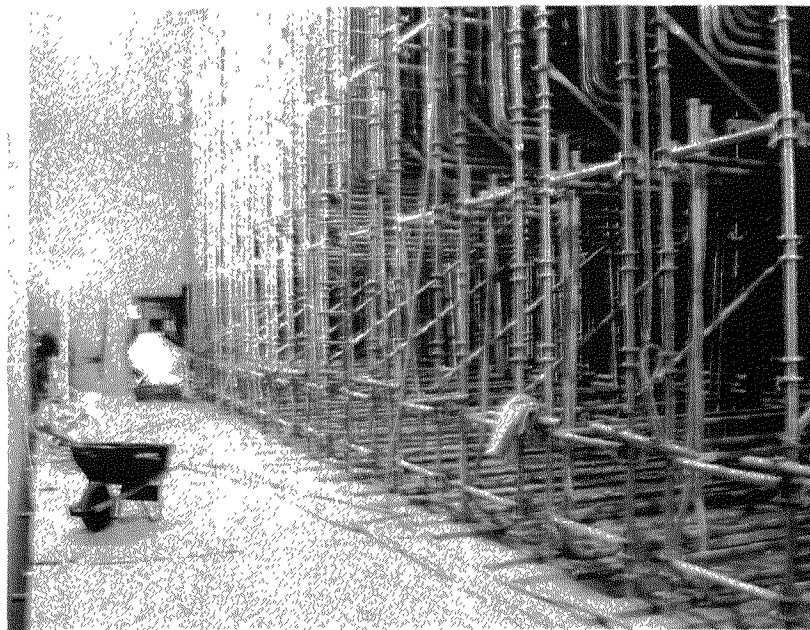
Old turbine alongside the new replacement turbine, the holes of the new turbine will be bored to match the old turbine.

**Unit 1 Outage** — More work was completed during this outage than any other outage in the history of IPSC, and more construction work since the original construction of the units was completed in 1987. Two major items were carried out during the outage. First, a new high-pressure turbine was installed. Second, the over-fire air system modification was made to the boiler. Contractors started arriving in January to set up their trailers and staging material. The most visible amounts of material were the many pallets of

scaffolding material needed to scaffold the inside of the boiler. This was the first time in the history of the project that the boiler was scaffolded from the bottom to the top. The over-fire air system required the installation of many ports that will



Sparger nozzles added to four of the reaction tanks in Unit 1. This will provide air for forced oxidation.



Scaffolding sitting on a platform inside the boiler.

support the system. Basically, this will changed the way the boiler burns coal; the goal is to further reduce the levels of Nitrous Oxide (Nox).

**Automated External Defibrillators (AEDs)** — As part of the annual health fair held on May 15, 2003, IPSC sponsored a fund raiser to purchase as many Automated External Defibrillators (AEDs) as possible. The fund

raiser was supported by employees who donated hand-crafted items or services that were offered on a silent bid to raise the money needed to purchase AEDs for the community. The items for bid were displayed at IPSC two days before the health fair and displayed for the community the morning of the health fair. Employees could also participate by purchasing a "Heartspark." Those employees who wanted to contribute cash toward the AEDs could buy a "Heartspark." The "Heartspark" is a certificate that lists the donor's name and contribution. Because



Employees donated their talents.



More items donated by employees and their families.

of generous donations and purchases from the community and from IPSC employees, enough money was raised to purchase four AEDs and a trainer AED.

**Outage Recognition** — Prior to the start of the Unit 1 major outage, a set of goals was established for the outage. The areas covered by the goals included: Productivity, Safety, Cleanliness, Effectiveness, Planning, and Support Work. The successful completion of the outage resulted in all employees receiving a full 8-hour day off with pay.

#### **Production Incentive Award — IPSC**

employees earned 73.39 percent of targeted goals for an award of 3.67 percent of their annual base wage. This was a good year that had one bad week in June. A manufacturer defect in a control valve was undetected until this year when it failed and caused an unplanned outage. The result was above five and half days lost generation that reduced the award for the year.

**Change in Defined Benefit Plan Trustee** — Zions Bank has served as the trustee for the Intermountain Power Service Corporation (IPSC) Defined Benefit (DB) plan, also called the retirement plan, since it was approved by the IPSC Board of Directors in December of 1983. Recently, Zions Bank determined they will no longer make major changes to improve their systems. They are in fact getting out of some of the DB plan business. To help their clients, Zions Bank entered into a strategic alliance with CIGNA Retirement & Investment Services. In this arrangement, CIGNA will provide Trustee Services for current Zions Bank DB customers, as well as for Zions Bank's own DB plan. Zions Bank will continue to provide the service of making payments from the

Other Pensionary Benefits (OPB) accounts, for example, to the medical insurance carrier, Blue Cross and Blue Shield of Utah.

On July 2, 2003, the IPSC Savings and Retirement Committee approved a recommendation to the IPSC Board of Directors that CIGNA Retirement & Investment Services be approved as the Trustee and record keeper for the IPSC Defined Benefit (DB) Plan. This action was taken based upon a careful review of the CIGNA/Zions information. The committee felt that it was prudent to accept Zions endorsement of CIGNA for the following reasons: First, we would receive a higher quality of fund analysis and recommendations with access to a wider range of the highest quality of funds. Second, the fees charged for the services of CIGNA/Zions would be less than the fees we are currently paying to just Zions. Third, the continuity of having Zions continue working with the funds, although in a lesser capacity, would allow for a long-standing, favorable relationship to remain in place.

At the July 22, 2003, IPSC Board of Directors Meeting, the Board gave their formal approval to this change.

**Health Insurance Portability and Accountability Act (HIPAA)** — All IPSC employees received training on the new Plant Administrative Instruction (PAI #149) covering privacy rules of health information. While IPSC for the most part does not fall under the new HIPAA rules, a PAI was written to set forth the policy that employees would be held accountable to follow with respect to medical information. The PAI has not yet been signed. It is still an advisory notice. The concept is to educate all employees about the need to keep medical information private unless there is a clear authorization from the individual(s) prior to any public disclosure being made. The PAI may be signed next year.

**Operation Electric Storm (Homeland Security)** — This year you may have seen arrivals and departures of a mysterious helicopter at IPSC. This Utah National Guard



Blackhawk helicopter in flight.



George Cross, IPSC President and Chief Operations Officer with Utah National Guard Brigadier General Stanley Gordon.

Blackhawk helicopter and other vehicles conveying military, security, law enforcement, and various other local and federal authorities will be seen throughout the year as plans for proposed exercises depicting national security level threats at IPP are developed. The exercises will be completed during the National Guard's annual summer camp in June of 2004.

Objectives will be to exercise local, state, and National Guard response assets; to identify issues and further develop relationships; and to exercise communications, identify issues, and provide solutions. Phased responses will come from IPSC, Millard County Sheriff's Office, Utah Department of Public Safety, and Utah National Guard.



Representatives of IPSC, Millard County Sheriff's Office, Department of Homeland Security, FBI, and Utah National Guard pose by Blackhawk. Left to right Joe Hamblin, Operations Superintendent; Pam Snyder, Captain, Securitis; Agent Scott Blackburn, Utah Criminal Intelligence Center; Sheriff Ed Phillips, MCSO; Lt. Forrest Roper, MCSO; Beth Ann Law-Schwartz, FBI; Lt. Col. Gordan Rawlinson, Utah Guard; George Cross, IPSC Station Manager; Lt. Col. Jerry Acton, FA CDR; Brett Wardle, Laborer IPSC; Jon Finlinson, Assistant Superintendent of Operations.



Standing by George Cross is Brett Wardle the lucky laborer who gets a free ride in the chopper.

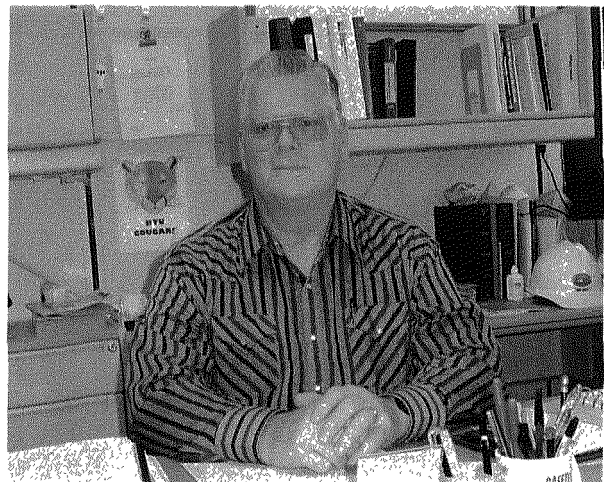
Outcomes will be analyzed and used to develop a blueprint for response at other utilities within the state. Among other things, there will be a public affairs and public information system developed to keep the public and IPP employees informed.

#### **Labor Management Committee**

— The process of Labor and Management working together under the heading of Mutual Gains continues to move forward. Monthly meetings in which both sides have an opportunity to meet and discuss concerns and issues have been held during the year.



**Retirement of Corporate Secretary/Treasurer** — Neil H. Clay, Secretary/Treasurer and Manager of Support Services announced in October that he would retire in January of next year. Mr. Clay has served in his present position since 1985.



Neil H. Clay, Manager of Support Services will retire in January 2004.

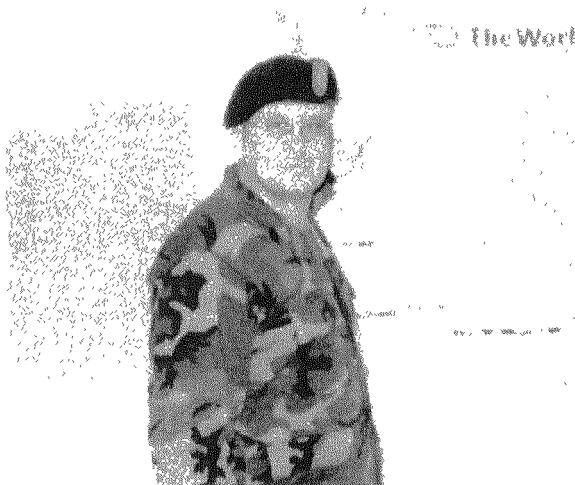


Eric Jeffs

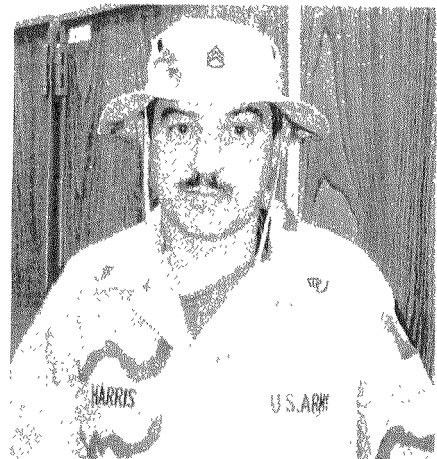
**Supporting Service to Our Country** — Three IPSC employees have been called to active military duty to serve in the War on Terror. Each of the employees were assigned to different areas of the world. A project to make IPSC aware of those serving in the military was started by Pam Warren and Roger Frazier. A photo board, honoring all who serve in the military and who have some connection to IPSC,

was organized and placed in the main lunch room of the Administration Building. This board is a reminder to

us of the sacrifice these families are making to help preserve our freedoms.



Terry Perez



Kirk Harris





Military Board showing pictures of IPSC employees and family members serving in the Armed Forces.

**Union Contract and New Local President** — By mutual agreement, the contract with IBEW Local 1619 and the International Organization was extended for one year, from January 1, 2004 to December 31, 2004. Becky Sawaya was elected to replace Wayne Spencer as the new President of Local 1619.

**Staff Appreciation Breakfast Served to Employees** — The smell of bacon sizzling on the grill was in the air the morning of April 10, 2003. Lots of other things were cooking as the IPSC Staff prepared a “Thank You Breakfast” for employees. The major outage for the month of March was one of the most labor intense outages in IPSC history, see related story – Unit One Outage. The President and Chief Operations Officer, George W. Cross

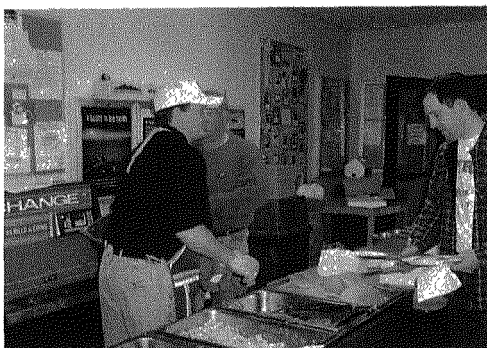


Breakfast buffet for employees.

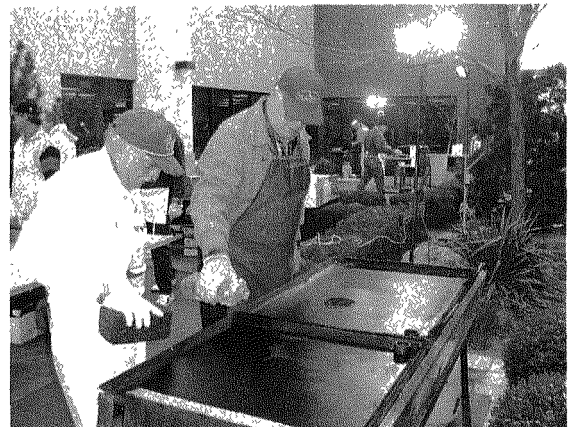
wanted to express his thanks to the employees for their work. The plan was to cook breakfast so that employees arriving for the day's work or those completing the night shift could have a nice breakfast. With plenty of food the event became an all-you-can-eat-thank-you breakfast from Staff to employees.



Employees enjoying breakfast before starting their day of work.



George Cross, Station Manager making sure that the buffet table is stacked with lots of pancakes, eggs, bacon, and sausage for the employees.



Dennis Killian, Technical Services Manager and Neil Clay, Support Services Manager preparing the grill for cleaning.



Lone Hawk Band.

**Annual Employee Activity Organization/IPSC Christmas Party** — This year's Christmas party was held in the Millard County Fair Building. Santa and Mrs. Claus (Mr. & Mrs. Tony Wright) were the hosts of the evening dinner, entertainment, and the drawings for door prizes. It was an enjoyable evening for all in attendance. Shasta Knight sang songs to start the evening and later dancing and listening music was

provided by the group called "Lone Hawk." The party lasted until the late hours of the



Lone Hawk Band performing for the IPSC Christmas Party. They played a variety of tunes from Country to Rock.



Santa and Mrs. Claus (Tony and Kim Wright) were having a great time at the IPSC Christmas Party.

evening for those who stayed until the end. The grand door prize was won by Kathy Barnes. About 75 five other lucky winners took home various other prizes. Everyone who attended received a large

candy bar from Santa or Mrs. Claus and each couple took home a scented candle that had served as a table decoration.

**Number of Employees** — By the end of the year, the number of employees was 487.

## LADWP

**Los Angeles City Officials Tour Intermountain Generating Station** — In December an executive group of visitors toured the plant and received a briefing by George W. Cross, IPSC President and COO.

The honored guests were:

Tony Cardenas

Jose Cornejo

Dominick W. Rubalcava

David H. Wiggs

Frank Salas

Henry Martinez

Eric J. Tharp

Los Angeles City Council Member

Chief of Staff for Tony Cardenas

President, Board of Water and Power Commissioners

DWP General Manager

DWP Chief Administrative Officer

DWP Chief Operating Officer - Power System

Operating Agent for IPP

## IPA

**Investors Visit Organized by IPA** — Unit 3 potential investors visited the site on September 9, 2003. A coal-fired third unit of the same size and general design as Units 1 and 2 has been proposed to be built at the Intermountain Power Project (IPP) site just north of Delta, Utah. IPSC employees served as tour guides for the invited guests who wanted to visit the site and meet the people who would operate a third unit. Plans continue to move forward with all of the permits and government approvals which are required for the unit to begin construction in the future. The final decision to approve the project is expected sometime in 2004.

**Financing** — June 30, the current weighted average borrowing cost was 4.70 percent.

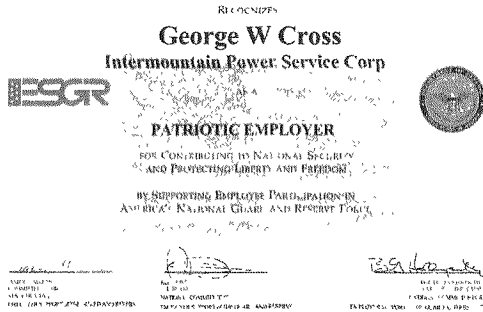


# 2004 — Military Call Up and New Department Heads

## IPSC

**Certificate Awarded to Intermountain Power Service Corporation and George W. Cross** — On Monday, December 1, 2003, First Sergeant Terry L. Perez of the 786<sup>th</sup>

THE NATIONAL COMMITTEE FOR EMPLOYER  
SUPPORT OF THE GUARD AND RESERVE



Certificate awarded to George W. Cross, President and Chief Operations Officer of IPSC, by the National Guard.

Freedom, First Sergeant Perez, who in civilian life is an IPSC employee working at Intermountain Railcar, presented a certificate and a pin to George in his office, then left immediately for continued duty in Colorado.

IPSC supports full-time employees who have been called to active duty by making up the difference between their military and civilian pay and keeping their positions open for them until they return from active duty.

Quartermaster Company, stationed in Fort Carson, Colorado, was on site with a member of his team to present a citation to IPSC and George W. Cross, Chief Operations Officer, for support of the military in actions taken after 9-11. Citing George's military background and the exemplary level of support IPSC lends to those of our employees who have been called to active duty during Operation Iraqi

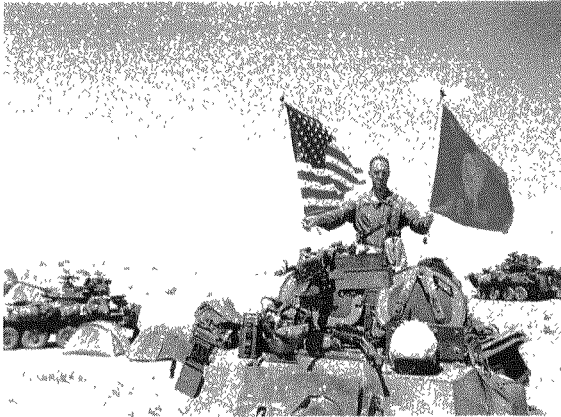


Certificate presented to George W. Cross by Terry Perez.



Eric's Platoon, Eric is top row center, Travis Keel, son of Bill Keel who is an IPSC employee, is in the standing row second from right.

**Active Military Servicemen** — Last year three employees from IPSC were called to active military service. Eric Jeffs, a member of the Marine Reserves, returned to work at the Plant in early January 2004, Kirk Harris returned in February 2004, and Terry Perez returned in July 2004. Eric's unit spent time in Iraq, Japan, Russia, Australia, and the Philippines before returning to the United States.



Eric aboard the Light Armored Vehicle (LAV).

**Presentation to Eric Jeffs** — Mike Mooney made the shadow box and Pam Jensen filled it with memorabilia from Eric's Iraq deployment. It was presented to Eric upon his return in January 2004.

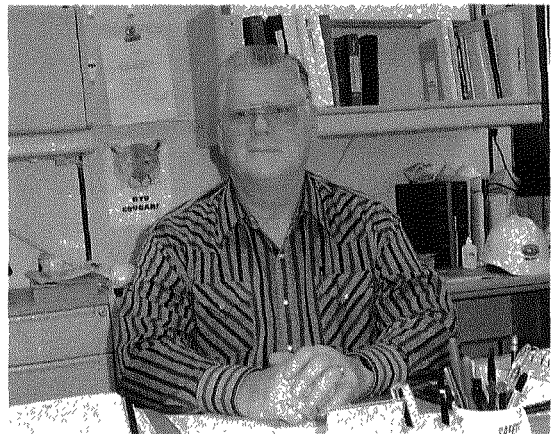
We appreciate Eric and his family for the time he spent protecting the freedoms that we enjoy.



Presentation given to Eric Jeffs. Left to right George W. Cross, Pam Jensen, Eric Jeffs, and Norman A. Mincer.

IPSC is proud of the work and commitment these employees make to defend our country.

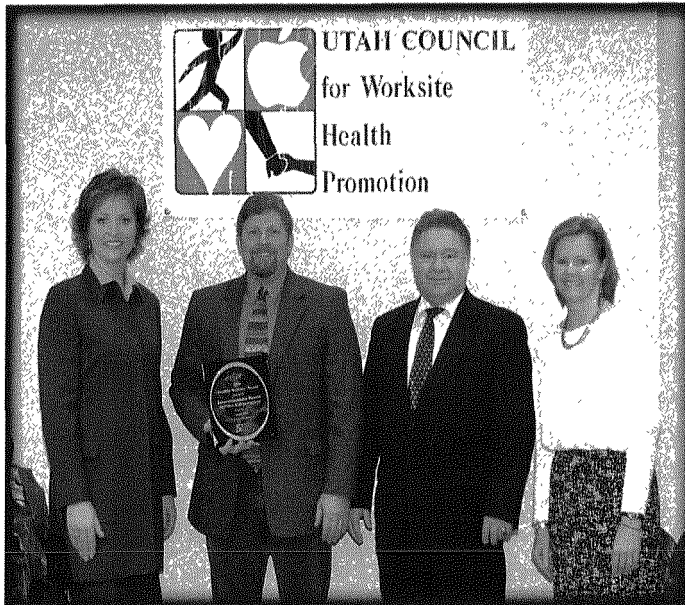
**Retirement of Neil H. Clay** — Neil served as Manager of Support Services from August 19, 1985. He also served as the Corporate Secretary/Treasurer during that time. Neil retired January 23, 2004.



Neil H. Clay, Manager of Support Services, retired January 23, 2004.

**Gold Plus Level Award** — On January 26, 2005, IPSC was honored for "Commitment to Quality Health Promotion at the Work Site," for 2004 and received the Gold Plus Level Award. The honor was given at an awards banquet sponsored by the Governor's Utah Council for Work Site Health Promotion (UCWHP). Each year the UCWHP honors businesses that are committed to health and wellness with various levels of wellness programs, both on quantity of intervention and then on quality of the programs.

This year four levels were offered: Bronze, Silver, Gold, and Gold Plus. The Gold level looks at many different types of programs including: facilities, education, prevention, motivation, employee and dependant involvement, and fitness with documentation of participation success. The Gold Plus level acknowledges companies for having specific written policies for



Gold Plus Level Award from Utah Council for Worksite Health Promotion. Left to right Mary Nickles, KUTV Channel 2; Brian Coles; Joe D. Hamblin; Lynne Nilson, Director of Worksite Health Promotion

wellness and safety programs, implementation of a quality safety program, and documentation demonstrating success, benefit cost ratio, and outcomes for a specified number of programs.

IPSC was honored by UCWHP for their basic level award in 1990, 1995, and 1996. In 1997, UCWHP changed their recognition programs and IPSC was recognized with the Silver level award.

For the years 1998 through 2002, IPSC received the Gold level award. The year 2003 was the first year IPSC has been eligible for the Gold Plus level award.

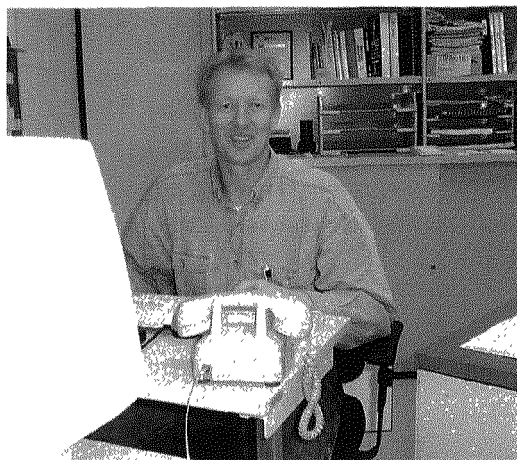
**Mutual Gains Training** — When the new labor contract was signed on June 21, 2001, the terms called for continued training in mutual gains bargaining. That training was held February 10-11, 2004.

**Presentation to Kirk Harris** — We appreciate our employees helping to protect the freedoms that we enjoy. The shadow box was made by Mike Mooney. Pam Jensen filled it with memorabilia from Kirk's Iraq deployment. It was presented to Kirk in February 2004.



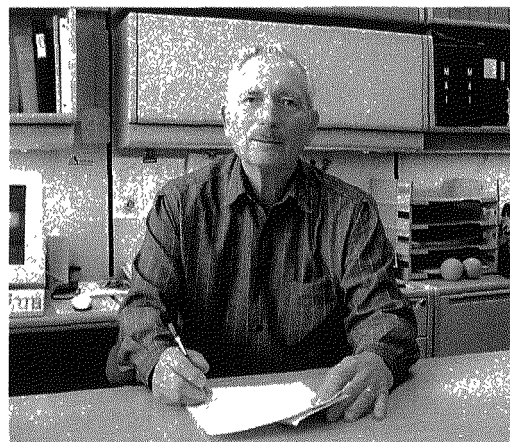
Presentation to Kirk Harris. Left to right George W. Cross, Pam Jensen, Kirk Harris, and Norman A. Mincer.

**Retirement of Norman A. Mincer** — Norman was hired June 7, 1984, as the Converter Station Manager. On October 25, 2000, he was transferred to the position of Superintendent of Maintenance. He served in that position until his retirement February 27, 2004.



Stanley L. Smith assumed the duties of Superintendent of Maintenance February 2004.

**New Department Heads** — New Department Heads were chosen to run the Maintenance and Operations Departments. Neil H. Clay, Manager of Support Services and Corporate Secretary/Treasurer retired in January; and Norman A. Mincer, Superintendent of Maintenance retired in February.



Norman A. Mincer retired February 27, 2004. He served as Converter Station Manager and then was transferred to Superintendent of Maintenance.

Joe D. Hamblin, who was serving as the Superintendent of Operations was transferred to the position of Manager of Support Services and Corporate Secretary/Treasurer.

Jon A. Finlinson and Stanley L. Smith were chosen as the new Superintendents of Operations and Maintenance Departments respectively. Most of the employees in the Operations Department work 12-hour shifts. It is their job to keep the plant running 24/7. This requires keeping the plant producing electricity around the clock. The Operations Department includes the Converter Station. The Converter Station's job is to convert Alternating Current (AC) to Direct Current (DC) power and transmit the power over the transmission lines to the different participants.



Jon A. Finlinson assumed the duties of Superintendent of Operations January 2004.

The Maintenance Department has employees working several shifts. Four ten-hour days and five eight-hour days are their primary shifts.

The job of Maintenance is to keep the equipment from automobiles to the large turbines in working order. They do this using plans and schedules to perform regular and normal/emergency maintenance. Sophisticated equipment is used to monitor machine performance while it is running to avoid unplanned or emergency breakdowns.



The Maintenance Department includes Intermountain Railcar located in Springville, Utah. Intermountain Railcar is responsible for keeping the railcars running to transport coal to the power plant.



Associate Engineer, Nathan Crop, bagging Unit 2 Generator.

**Unit 2 Outage** — In March the employees at IPSC completed a planned major outage of Unit 2. The outage took four weeks to complete and the unit was back on line March 28, 2004.

Normal planned maintenance as well as several large, labor intensive jobs made this outage more involved than usual. One of the large labor intensive jobs was the modification to the boiler for better environmental emissions control. More than a hundred men worked inside and outside the boiler installing new equipment that will help lower emissions of Nitrogen Oxides (NOx) from the unit. To accomplish this work, the whole inside of the boiler (roughly 100 feet wide by 50 feet deep by 300 feet tall) was scaffolded. Scaffolding the inside of the Boiler is a big job that takes a lot of work in a short period of time. Many semi-truck loads of scaffolding are required to get the job done. The planning and preparation for these jobs had been underway for many months. In January, contractors started staging material that would be used in the outage.



Scaffolding being erected in the boiler.

**Electric Storm** — The Electric Storm exercise began June 14, 2004 and ended June 17, 2004.

Participants included employees from IPSC, Millard County Sheriff's Office, Utah State Department of Public Safety, and the Utah National Guard.



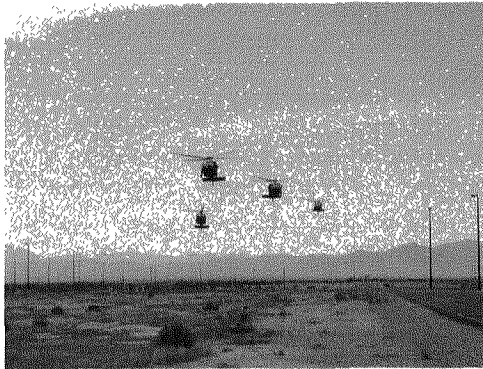
Lone soldier glassing the events surrounding the power plant.



Helicopters dropping off troops for Electric Storm.

This exercise was the first of its kind to include participation from private industry, local authorities, state government, and military.

The Administration Building, Conference Room 3, was designated as the Communication Center and Conference Room 4 was designated as the Emergency Operations Center.

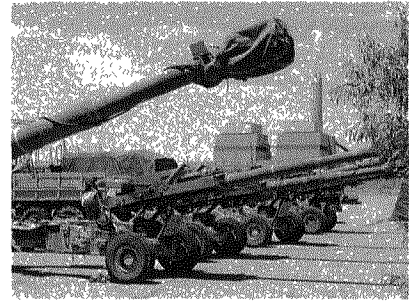


Helicopters coming in to drop off soldiers.

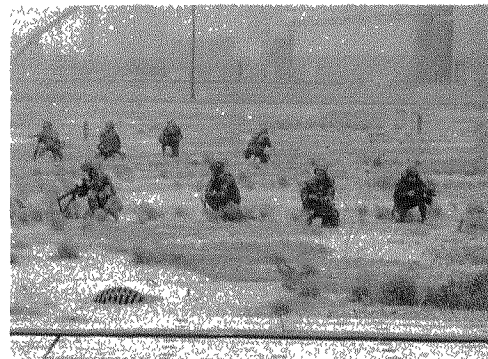
IPSC had several volunteers who were used to enhance the training of the Army and IPSC response personnel. The power plant operations continued normally with no interruption of service. Successful communication, coordination, and sharing of critical information among the involved organizations

were the measurements of success. The military reported success with utilizing safety, applied skills, and maintaining high troop morale.

The opposition force also had some success. They were able to gain access to the power plant with forced entry at Post 4 and placed a fake bomb inside the Unit 1 turbine front standard. The incursion resulted in 20 mock fatalities and 30 mock wounded.



Artillery at the Community Center during Electric Storm.



Troops landing for exercise of Electric Storm.

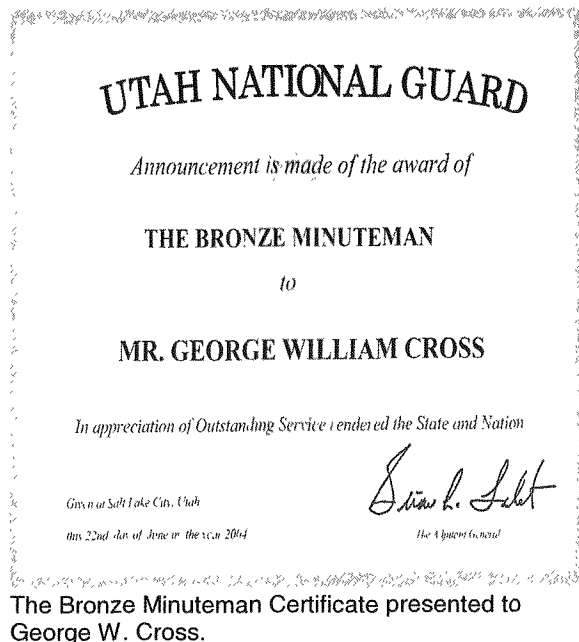
**George W. Cross Receives Minuteman Award** — The Bronze Minuteman was awarded to Mr. George W. Cross on June 22, 2004, for his commitment to the Utah Army National Guard and the state of Utah. Mr. Cross began military service with the US Navy in 1970 where he served as Lead Petty Officer of the Reactor Controls Division of the nuclear-powered submarine USS Daniel Boone.



George W. Cross receives Minuteman Award from Major General Brian L. Tarbet, the Adjutant General of the Utah National Guard; retired Senator Jake Garn looks on.

Mr. Cross expanded his expertise in the nuclear power area by then serving as a Nuclear Studies Instructor at Memphis State University. While there he obtained a Senior Reactor Operator License. Utah benefitted from Mr. Cross' expertise when he came to

the Intermountain Power Project in 1983, first as an instructor, and later as an engineer responsible for the startup and operation of both units Main Turbine and Auxiliary Systems. He currently serves as the President and Chief Operations Officer of the Intermountain Power Facility. Mr. Cross actively supports the Utah National Guard in its training efforts. In June, the Guard conducted a major anti-terrorism exercise within the confines of IPP requiring tremendous support and coordination from Mr. Cross. His support was complete. He opened the doors to this facility and donated employee time to assist the Guard in planning and execution of this exercise. His support was vital to the mission. The Utah National Guard was pleased to present Mr. George W. Cross the Bronze Minuteman for his service to the Utah Army National Guard, the state of Utah, and this great nation.



**Wellness Program Walking to Athens** — In April, employees and spouses were invited to walk to Athens by participating in the IPSC Olympicfest 2004. Each person who signed up was given a pedometer to record miles walked. The goal of this program was to improve cardiovascular health and fitness. Participants kept track of their exercise minutes and/or miles walked. The activity selected was cardiovascular or aerobic in nature. Sessions could be broken down into no more than two sessions per day; an example would be to exercise on the bike and then go walking. The first 200 employees who made it to Athens received a \$35 gift certificate toward a new pair of walking or running shoes. Other gifts were available.

**Presentation to Terry Perez** — A shadow box was made by Mike Mooney. Pam Jensen filled it with memorabilia from Terry's deployment. This was presented to Terry upon his return in July 2004. We appreciate Terry and his family for the time and effort he spent protecting the freedoms that we enjoy.

**Gravel Roads Coated On Site** — Gravel roads were coated with Magnesium Chloride, the same chemical that has been used for the last 5+ years. The roads were



Presentation given to Terry Perez. Left to right Stan L. Smith, George W. Cross, Terry Perez, and Pam Jensen.

coated to keep dust level controlled. Roads by the ponds, perimeter roads, haul roads, and the interior roads were coated. Roads were marked with caution tape to keep everyone off them for 6 to 12 hours to allow the chemical to sink into the road material. When it was necessary to drive on these roads, caution turning and driving slowly was advised. After 24 hours the roads were ready to drive on.

### **Community Center —**

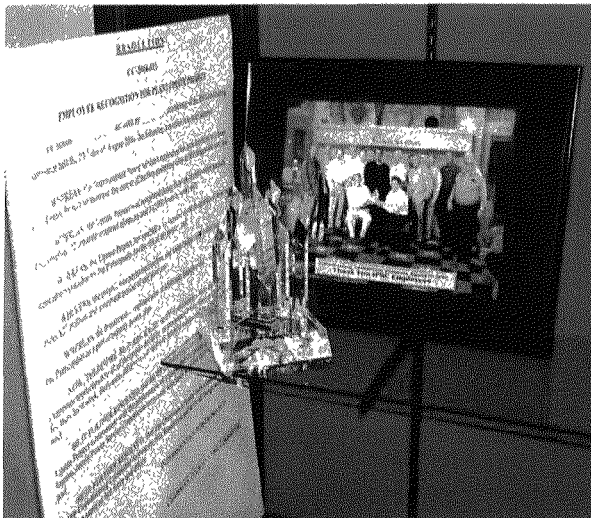
The IPSC Community Center located near the power plant on Brush Wellman Road has been used by many people and groups over the years. Some of the activities that have taken place are family reunions, volleyball and softball games, scouting adventures,

company parties, summer camps for different school districts' marching bands who arrive in August, and breaks for school kids who visit the power plant for field trips. The Army also used the Community Center in June to work on an exercise called Electric Storm which simulated several ways they can respond to threats to the power plant. IPSC has also held several annual summer parties at the Community Center.



Community Center is used for a variety of recreation, seminars, classes, bands, and Utah National Guard exercises.

**Labor Management Committee —** Several meetings were held, late in the year, to consider a new Union Contract. The contract was voted on, and will be in effect from January 1, 2005, to December 31, 2008.



Award presented by the IPP Coordinating Committee to IPSC for completing the Uprate Project on time and under budget estimate.

**Station Uprate Project —** In March 2004, the station Uprate Project was completed. This allowed each unit to show a full-load rating of 950MW. This uprate represents an 8.57 percent increase in gross output for the facility. The entire uprate was completed for a cost of approximately \$26,000,000. The project will generate an estimated additional revenue of over \$30,000,000 annually.

The Uprate Project was completed on time and 34 percent less than the original budget estimate of \$35,000,000. In recognition of the significant benefit to the project, an award was presented to IPSC by the IPP Coordinating Committee, the ratepayers, the stockholders, and the operating agent. The



award included a cash distribution to all IPSC employees for initiating and completing this uprate in a quality and timely manner.

**Circulating Water Line Investigation** — The investigation into the extent of failure and the possible options for repair of the corroding circulating water lines is continuing. Last spring, we had an NDE firm examine the pipes using eddy current testing to determine the amount of broken reinforcing wires in each section of pipe. The testing showed that out of 349 sections of pipe tested on Unit 1, 116 (33%) had more than ten (there are 340 wires in a typical section) broken wires with many having all of the wires broken. On Unit 2, 353 pipes were tested and 144 (40%) had more than ten broken wires.

The plan for repair and protection of the pipe will consist of two separate phases. The first phase will be to install cathodic protection on all of the pipes on both units. This will slow down the rate of corrosion to both the wires and the cylinder. The second phase will be to repair the sections of pipe most “at risk” for crack initiation. Due to our low operating pressure, it is unlikely that we would ever have a catastrophic rupture even if the core does rust at a crack. The corrosion would exhibit as a leak while still retaining sufficient structural strength to prevent bursting. Even small leaks could result in unit down time to repair so it is still prudent to expend the effort and resources to correct the problem before it occurs.

**Major Electrical Project** — Digital Controls System and Information System Upgrade (ABB) - status Phase 1, Unit 2 portion of the project was installed during the March 2004 outage. This included replacement of the Foxboro Fox 1A Information System and Rochester ISM-1 Annunciator System with the new ABB Industrial IT System. In addition, datalinks to the Turbine Generator Supervisory Instruments (TGSi), Bently-Nevada Turbine and BFPT Vibration, Flame Scanners, Foxboro Microspec Controls and Modicon Programmable Logic Controllers were also installed. The system is operational and providing unit data to the Operators. There are a few deficiencies that ABB has been working on since the outage; they were given a deadline of December 31, 2004 to have all of these resolved.

Simulator Phase portion of the project was completed in June 2004 to support the installation of the Esscor supplied Simulator. The controls supplied by ABB include Turbine, Boiler Feed Pump Turbine, Boiler Combustion, Burner Management, and complete main control panel switch replacement for miscellaneous equipment. The delivery of the hardware and software by ABB to Esscor was completed the end of June 2004. Work will continue between ABB and Esscor until the Factory Acceptance Test of the Esscor Simulator, scheduled for November 2004 has been completed.

Phase 2, Unit 1 portion of the project (replacement of the Fox 1A Info System and RIS) has commenced with the completion of the partitioned database in July 2004 and the hardware configuration in August 2004. Work on this phase will continue until installation, which is scheduled for March 2005.

**New Trustees** — The Trustee for the Pension Plan, Cigna, was purchased by Prudential Retirement. This action required some administrative changes and approval from the IPSC Board of Directors to formalize the action. About this same time, the Trustee for the Other Pensionary Benefits (OPB), Zions Bank, gave notice of their intent to resign as Trustee for the OPB. This action required searching for a new Trustee. Wells Fargo Bank was selected and approved by the Board as the new Trustee for the OPB.

**New Funds Added to the Savings Plan** — After a review of the funds in the Savings Plan, a decision was made to have a formal study completed by Towers Perrin. The results of the Towers Perrin study recommended eliminating some of the funds and adding others. The Savings and Retirement Committee studied the report and selected a number of funds to add. In August a representative of Putnam came on site and conducted an educational class on the new funds and the different choices employees could make.

**Dairy Lawsuit** — Some of the Dairy farmers in the area felt IPSC was responsible for losses to their livestock. A lawsuit was filed in California to have the case heard in that state. A hearing was held and the matter was deemed to be an issue to be heard in the Utah Court System. The Plaintiffs appealed to the California Supreme Court which refused to hear the matter.



Waste water holding basin.

**Waste Water Holding Basin Cleaning** — The Waste Water Holding Basin is used to collect the process water from the sludge conditioning process. This water is known as recovered water and is recycled back for use in the scrubber modules. The original capacity of the basin was 650 acre feet of water. Over the years, the capacity of the basin has been reduced by deposition of solids which have carried over from the thickeners at sludge conditioning.



Dredging of the ponds.

Evaluation of the capacity of the Waste Water Holding Basin in 2003 determined approximately one half of the available capacity had been lost due to the buildup of solids. Dredging had been used in the past to move the solids away from the recovered water pump suction. This effort provided some temporary benefit.

The decision was made to remove some of the solids from the pond by whatever method was deemed most viable. Removing the solids with heavy equipment was considered a desirable option if it could be done.

Rancho Equipment of Delta, Utah was contacted and offered a solution using a dragline with dump trucks to haul the sludge. During the winter of 2003-04, Rancho worked on removing the solids from the basin. Approximately 200,000 yards of material was removed.

**Aging Workforce** — A plan was developed by IPSC to plan for and work with a succession planning document to address those positions that would be impacted by an aging work force.



Waste water pond.

**Number of Employees** — By the end of the year, the number of employees was 481.

## LADWP

**Notice of Withdrawing from Unit 3** — The Los Angeles Department of Water and Power notified IPA that they would not participate in Unit 3.

## IPA



The life of the power plant has been extended to 2044.

**Proposed Unit 3 Expansion Postponed until Spring 2006** — During the Delta Area Chamber of Commerce Social held on March 10, Reed Searle, the IPA General Manager, stated that due to delays in the air quality permitting process, the probable date for construction to begin will be late Spring 2006. This would put completion around 2010. The application to obtain an air quality permit was filed in November 2002. Air quality hearings were held in Delta in April. A large number of residents from around Millard County were in strong support of the project. If Unit 3 proceeds, it will add an additional 950 gross megawatts of

generating capability to the facility's existing 1,900 megawatts gross capacity. The new unit will be a near replica of Units 1 and 2, with the latest in environmental and technological improvements. Cost of constructing the additional unit will be about \$1.75 billion.

Estimated cost for modifications to the existing 345kV switchyard is \$5.3 million, which will be done in conjunction with construction. Average annual employment at the site during construction will exceed 1,000 workers during the peak, which is expected in the fourth year. IPA has made an oral commitment to use employees and materials from

union and nonunions. IPA still owns property to build apartments for Unit 3 construction workers to use. Mr. Searle also announced that they were officially changing the length of life for the project from the year 2027 to 2044.

**Financing** — June 30, the current weighted average borrowing cost was 4.44 percent.



## 2005 — Beginning Plans for Unit 3

### IPSC

**Pat Finlinson Received Associate in Risk Management Certificate** — On January 6, Pat Finlinson was awarded the Associate in Risk Management Certificate as designated by the Insurance Institute of America, the premier certification agency for the risk and insurance industries. To qualify for the certification, Pat had to successfully complete a series of three examinations testing his understanding of risk theories, risk management matrices, risk control procedures, risk financing options, and contractual risk transfer techniques.

**Men Who Cook at IPSC** — In January a calendar was created using recipes from men who work at IPSC. Samples of the recipes were available for tasting. Proceeds from the sale of the calendar are planned to be used to purchase personal locator beacons.



Rick Wright's Hot Pepper Bread.



Jim Knapp's famous Cherry Mash.



Employee browsing through calendars which sold for \$10 to help buy personal locator beacons.

**New Putnam Client Relationship Officer** — In January, Elizabeth Antin, the new Client Relationship Officer from Putnam Investments, visited with some members of the IPSC Savings and Retirement Committee.

**Retirement and Savings Plan Changes** — In March, the Summary Plan Descriptions (SPD) for the IPSC Retirement and Savings Plans were updated. The new trustees and the most recent changes including the Rule of 85 and the formula providing 1.5 percent for each year of service for the plans were listed in the Retirement Plan Summary Plan Descriptions (SPD).

**Outage Appreciation Breakfast** — On the morning of April 20, an Outage Appreciation Breakfast was cooked by Staff and some of the Assistant Superintendents. The breakfast was provided to express thanks for the dedicated and long hours of work during the Unit 1 major outage.



George W. Cross talking with employees in line for the breakfast.

**Unit 1 Spring Outage** — During the last part of April and the first part of May, a series of small events created a big problem with Unit 1. The month-long major outage for Unit 1 had just been completed. After the unit was returned to normal status and generating electricity, there were a series of trips caused by an escalation of several problems. Unit 1 was back online May 13.

During these outages, many employees and consultants scrambled to determine the problem and develop solutions. This perplexing and difficult challenge was one of the biggest IPSC had faced. The ability to analyze the problem, and the planning and working to get the Unit back online was a strong indicator of how well the employees pulled together to solve a serious problem.

**Back-Door Salesman Training** — In the spring, an on-site training seminar was presented to a number of employees involved with the planning and purchasing of items. The seminar titled "Back-Door Salesman" was designed to make employees aware of the skills that highly trained salesmen use so employees do not inadvertently disclose certain financial or management information.



Jon Finlinson and Roger Stowell cooking pancakes for the breakfast.



Employees enjoying the Outage Appreciation Breakfast.

**Medical and Dental Insurance** — In April, planning meetings were held with our medical and dental insurance consultants to discuss medical care provider services and the changing landscape of the medical and dental insurance. These meetings provided IPSC with an overall picture of the expected increase that will be seen for medical and dental insurance.

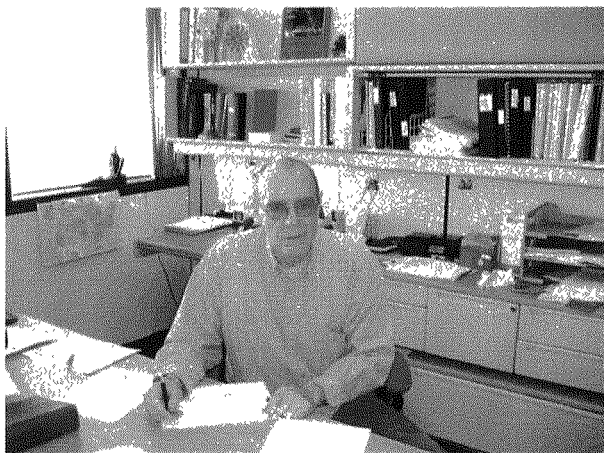
In May, IPSC was notified the renewal for the fiscal year starting on July 1 required a 10.3 percent increase in the amount paid for medical and dental insurance.

**Superintendent of Maintenance Resigned** — In May, Stanley L. Smith, Superintendent of Maintenance, announced he was leaving IPSC. Stan had worked for Bechtel Construction prior to being hired by IPSC more than 20 years ago. Stan decided to return to Bechtel.

**New Laborers Hired** — In late May, five laborers were hired to sustain the laborer staffing level. As job openings become available, promotions are made in-house, eventually creating a job opening at the laborer level. A series of job openings in the spring created a need to hire the five laborers.

**Community Health Fair** — A community health fair, cosponsored by IPSC, was held during the month of May.

**New Superintendent of Maintenance, G. Mike Alley** — Mike was approved by the



G. Mike Alley assumed the duties of Superintendent of Maintenance May 2005.



The five new laborers hired in May: Justin Abbot, Alan Wood, Cody Rasch, Kiley Chase, and Robert Niles.

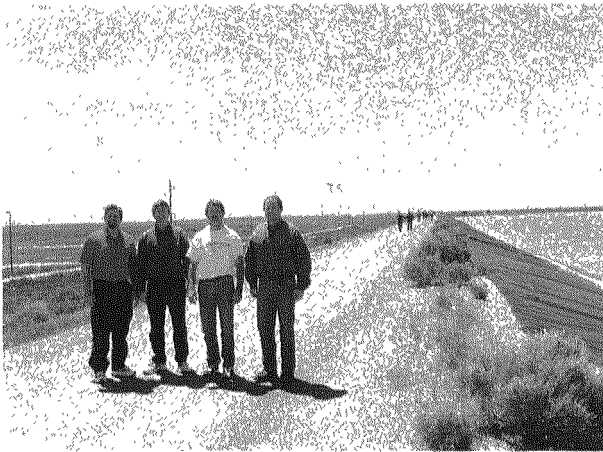
IPSC Board of Directors as the new Superintendent of Maintenance in a meeting held on May 23. Mike began working for IPSC in June 1985 and has worked as a Maintenance Planner, Planning Supervisor, and Assistant Superintendent of Maintenance.

**Unit 3 Prospective Investors** — Unit 3 prospective investors participated in a tour conducted by IPSC Management.

**Water Year** — The water year, beginning in October 2004, started out with a normal forecast. The project did not have a one-

year's supply reserve, because the Sevier Bridge Reservoir had been drained in 2003 for repairs. IPSC did not intend to rent any water in order to replenish the reserve; however, a very good snow pack and run off allowed limited water rental later in the spring. When the irrigation season closed, there was a substantial amount of water in the reservoir.

**Fun Walk** — In May, IPSC observed the National Employee Health and Fitness day by sponsoring a Fun Walk. The Walk was a 30-minute trek on the IPSC walking trail located near the on-site reservoir. About 100 individuals participated in the Walk. All participants received a T-shirt or tank top. Shift workers and spouses who were unable to attend, completed the walk at home that same day.



Brian Coles, Blaine Ipson, Garry Christensen, and Ken Nielson participated in the Fun Walk.



Employees walking along the on-site reservoir.

**IPSC Summer Party** — The annual summer party was held at the Seven Peaks Water Park in Provo.

**New Telephone System** — A change in the telephone system was made during the year. The previous phone system had been in service since 1984. Replacement parts were no longer available and the system could no longer support upgrades. The new Nortel system is capable of supporting more than 1,100 telephone extensions for voice communications and long distance connections.

**Blood Drives at IPSC** — Two blood drives are scheduled at IPSC and Intermountain Railcar in Springville each year. The average number of units of blood donated is 90. Employees are rewarded for their participation with a T-shirt.

**Production Incentive Award Program** — In mid-July, the Operating Agent, the Los Angeles Department of Water and Power, determined the employees of IPSC had earned a Production Incentive Award for the fiscal year ending June 30. The employees earned a score of 3.645 out of a possible 5.0. The checks were distributed July 13.

**High School Bands Trained at the Community Center** — In recent years during August, the Community Center has been used by a number of high schools for band camp. This year there were three high schools who reserved the facility. The first week, August 2 - 5, Timpview High School brought approximately 50 people for training. American Fork used the facility during the second week, August 8 - 11, and brought approximately 230 people for training. During the third week, August 15 - 18, Davis High School brought approximately 275 people for training.

**Coal Truck Deliveries** — During the fall, large trucks and trailers were on the road again delivering coal from the Sufco Mine. Trains consisting of approximately 100 railcars haul coal year round. Trucks are used, as necessary, to help keep the plant supplied, build up the active coal pile, and add to the reserve coal pile. Each truck and trailer hauls approximately 42 tons of coal per load. Each of the two generating units burns approximately 380 tons of coal per hour; therefore, the amount hauled in an average truck and trailer is enough to last for just over three minutes.

**Laborer Test** — In September, a test was given to prospective candidates for IPSC laborer positions. Over 260 individuals registered online for the test. Approximately 100 received a passing score. IPSC has a low employee turnover rate and candidates realize they may have to wait years for a chance of employment.

**VIP Burbank Tour** — In September, representatives from Burbank, California, including the mayor, participated in a tour of IPSC.

**Military Activation** — The war on terror has depended on many reserve units to actively serve. Three IPSC employees served in various parts of the war effort; Don Ashcraft, Eric Jeffs, and Gordon Rawlinson.

**Military Presentation to Don Ashcraft** — Don Ashcraft returned to work in October after six months of activation. IPSC President, George W. Cross, recognized his service by presenting him a watch.

**The Big Dig** — In early October, a serious leak was detected in the large circulating water lines near the cooling towers. A major project was initiated to repair the line after an inspection found structural failure in several sections. Due to the urgency of the situation, the water line was excavated and repaired by IPSC employees using IPSC resources. The weather hindered the repairs, which



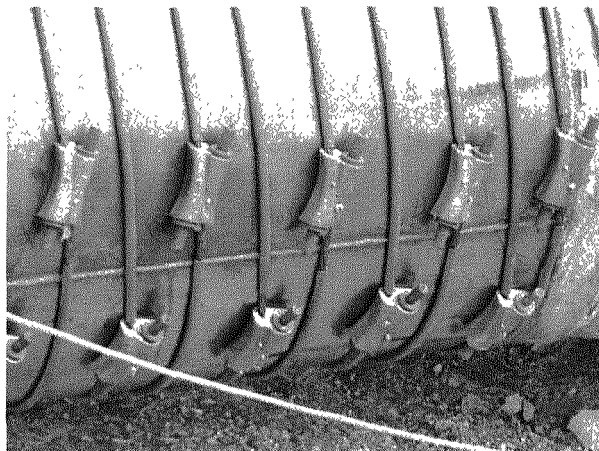
Presentation given to Don Ashcraft. Left to Right George W. Cross, Don Ashcraft, and Pam Jensen.



included wrapping the pipe in sheet metal, wrapping the pipe in metal tension bands, applying a coating of cement-like material with mesh fencing, and applying a tar-like material to seal the pipe.



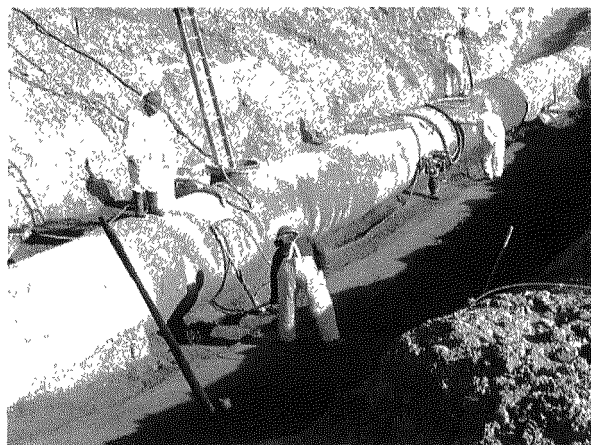
Employees preparing the pipe to have the sheet metal wrapped around it.



Tension bands wrapped around pipe.

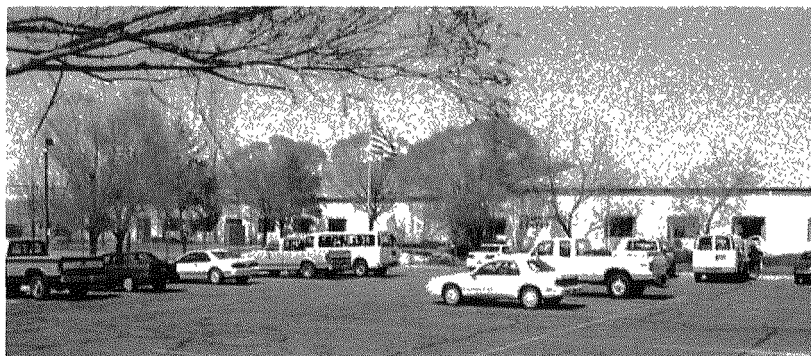


Employee spraying Gunitite (cement-like material) over pipe wrapped in mesh fencing.



The repaired pipe is now being backfilled.

**Community Center (New Management and Hours)** — In the fall, the contract to operate the Community Center was sent out for bid. The contract was awarded to Shipley Enterprises. The center will now be open from 4:00 p.m. until 9:00 p.m. Monday through Friday. Other hours and Saturdays are available by reservation.



Community Center.

**Gold Plus Level Award** — In October, Joe Hamblin and Brian Coles attended the awards ceremony for the Utah Department of Health. IPSC received the Gold Plus Level Award for its work to support healthy lifestyle changes by employees.

**Christmas Party** — The Christmas Party was held at the Millard County Fair Building. Employees and their guests enjoyed a steak or chicken dinner. Comedy Sportz provided the main entertainment for the evening. A live band played music until midnight. Prizes were drawn throughout the evening. IPSC's EAO, organized a wonderful evening of food and fun for all who were able to attend.



Joe Hamblin and Brian Coles accepted the Gold Plus Level Award for IPSC.



Money tree with paper dollars on it representing money that was donated for the area Sub-for-Santa Program.

**Sub-for-Santa** — IPSC employees brought some smiles and fulfilled dreams of hope to those less fortunate by donating 250 gifts and \$531 to the area Sub-for-Santa Program.

IPA and IPSC participated

in the Delta Festival of Trees. Two Christmas trees were purchased and then given as gifts to the community. Proceeds from the sale of the Christmas trees were used to help sponsor the area Sub-for-Santa Program.



A few of the gifts donated by IPSC employees for the area Sub-for-Santa Program.



**Humanitarian Relief** — During the year, IPSC employees made monetary donations via their paycheck so food could be purchased for the local food bank. At the end of the year, the total amount donated was 11,923 pounds of food. This project helps people in our area who are in need of food assistance. Thanks for all your generosity.

**Technical Projects Continued** — Technical upgrades or improvements continued to the carbon fiber repair of circulating water lines, digital control system, and ID fan variable speed drives.

**Number of Employees** — At the end of the year, the number of employees was 483.

## **LADWP**

**Retirement of John W. Schumann** — Mr. John W. Schumann, a member of the IPSC Board of Directors, announced his retirement in the spring. Mr. Schumann had served as the Director of System Planning and Projects for the Los Angeles Department of Water and Power. He retired in July.

**Retirement of C. Edward Miller** — Mr. C. Edward Miller, a member of the IPSC Board of Directors, retired in the fall. Mr. Miller had served as the Director of Power Supply Operations for the Los Angeles Department of Water and Power.

## **IPA**

**Financing** — June 30, the current weighted average borrowing cost was 4.66 percent.

## 2006 — New DCS and Generator Control Systems

### IPSC

**New ICS Simulator** — The ICS simulator was under development for the past four years, with Steve Boardman having the primary responsibility for design and development of the system to provide realistic rehearsal for specific procedures and emergency responses. Construction and assembly work were done by Dave Steele. The simulator which mimicked the spatial relationships and appearance of the main control desk and main control panel using the instructor's console, was capable of reproducing most of the day-to-day operational circumstances faced by ICS personnel. Additionally, various abnormal and emergency scenarios were programmed and practiced. In a system which was as reliable as this one, such practice is was a rarity.

The simulator also provided a means to collect and store much of the accumulated expertise of the experienced ICS personnel. IPSC had the potential to lose this wisdom and lore as it faced the anticipated increasing turnover at IPSC. This new system helped to review and record this knowledge and facilitated its transfer to incoming replacements.

**IPSC Mourned the Passing of Joe D. Hamblin, Manager of Support Services** — Joe Del Hamblin, age 55, passed away suddenly Friday, February 6, 2006. Joe was born on May 1, 1950, in Kanab, Utah, to Ben Broadbent and Christina Chatterley Hamblin. He married Marsha Kay Schoenfield, his high-school sweetheart, on July 25, 1969. Joe and Marsha were married for 36 years and had five children and two grandchildren.

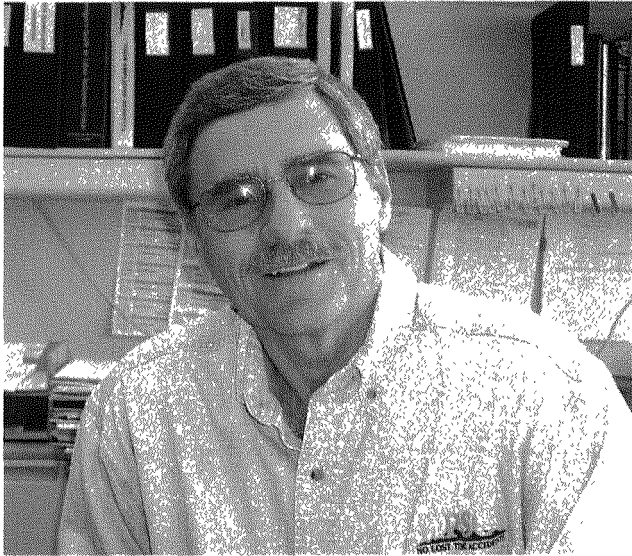
Joe graduated from Kanab High School in 1968. He attended Utah Technical College for two years where he earned a degree in Electrical Automation and Technology. He worked for Utah International, Navajo Generating Station, Peabody Coal, Westinghouse Hanford, Laramie River Station, and MATSCO before being hired at IPSC, in 1984, as an Assistant Superintendent of Maintenance. During his 21 years of employment at IPSC, he served in the following management



Joe Del Hamblin, Manager of Support Services, passed away February 6, 2006.

positions: Maintenance Superintendent, Converter Station Manager, Operations Superintendent, and Manager of Support Services.

Joe was born and raised a true cowboy. He will be remembered for his "cowboy up" attitude, his black Stetson cowboy hat, and his boots; but more importantly, he will be remembered for his positive influence, smile, and friendship.



Roger W. Stowell assumed the duties of Manager of Support Services - February 2006.

**New Manager of Support Services and New Personnel Manager** — The Manager of Support Services is responsible for the Clerical Pool, Warehouse, Accounting, Purchasing, and Personnel Sections. Roger W. Stowell was approved by the IPSC Board of Directors as the new Manager of Support Services on February 22, 2006. Roger began his employment with IPSC as Personnel Manager in December 1983. Prior to IPSC, he worked for IPA on impact alleviation for IPP, as well as for Salt Lake City. Roger received a bachelor degree from Brigham Young University (BYU) and a master degree from the University of Utah (U of U).

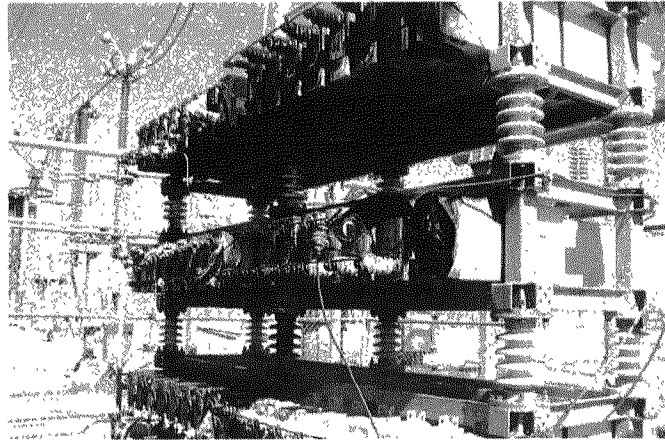
Jim Hill replaced Roger as Personnel Manager. Jim Hill had been working in the Personnel Section since January 1987. Jim received a bachelor degree from BYU and a master degree in Human Resource Management from the U of U. Prior to IPSC, he worked for Milne Truck Lines and Questar Corporation.



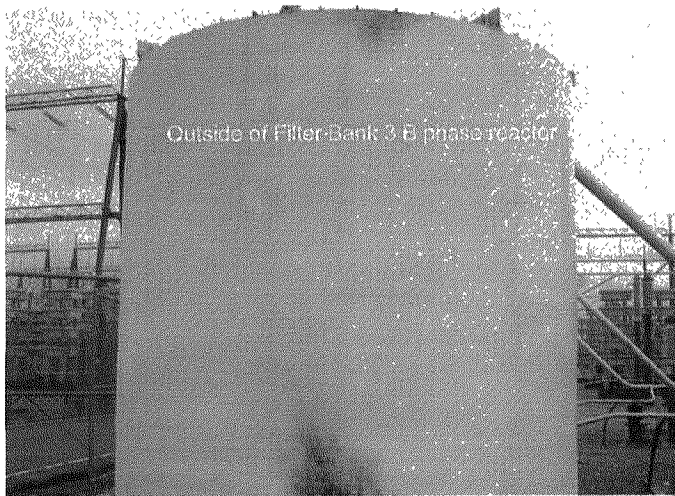
Jim Hill assumed the duties of Personnel Manager - February 2006.

**Two Fires at Converter Station During March** — During the early morning hours on March 4, Converter Station Operators heard an explosion and saw a fireball on the south end of the ICS DC switchyard. Ice, snow, and contamination caused a flashover on Capacitor 1M. Capacitor 1M consisted of 96 individual capacitor cans connected in series and parallel to give a capacitive rating of 14 uF. Its purpose was to prevent overvoltages on the metallic return bus in the event of commutation failures at Adelanto or close AC faults at ICS.

Cap 1M had 48 individual capacitor cans destroyed either due to the resulting fire or flashover. Five of the support insulators were also damaged. ICS Engineers, along with consultation from ABB, devised an interim solution concerning a reconfiguring of Cap 1M. Cap 1M was rewired to 7 uF from the original 14 uF and an arrester was temporally placed in parallel with the newly configured Cap 1M. This solution, although not perfect, allowed for metallic return operation without restriction to load. Sixty new capacitors were ordered to return Cap 1M to the original specifications.



One of the 48 individual capacitor cans on Capacitor 1M that were destroyed because of the flashover.



One of the filter banks damaged during a fire at the ICS AC yard.

On March 18, at 16:20, another fire was reported in the ICS AC yard. The reactors on all three filter banks were on fire. At the time of the fire it was windy and IPSC was experiencing a wet snow storm. Nine air core reactors that filtered the 3/5/7 harmonics were damaged by the fire. Filter bank 1 was restored to service with one spare and the best two damaged ones. Filter banks 2 and 3 were restored without the 3/5/7 filters available. This configuration limited the DC transmission system to 1,280 MW.

**Military Presentation to Gordon Rawlinson** — On March 15, LTC Gordon Rawlinson (alias GLR Baghdaddy) was presented a framed montage honoring his military service. Gordon was mobilized to Baghdad, Iraq, on September 11, 2005, for a six-month tour. He was assigned to the Joint Contracting Command - Iraq/Afghanistan (JCC-I/A) as the J3 in charge of military operations. The JCC-I/A headquarters was located in the Green Zone, or International Zone (IZ), in downtown Baghdad, and was in charge of all reconstruction/military contracting in Iraq. Over 35,000 contracts were issued for over 18.7 billion dollars. Through car bombs, roadside bombs, rockets, mortar, and gunfire attacks, he was able to make it home safely. Gordon appreciated the freedom in the United States and the support he received from IPSC. Making the presentation were



Presentation given to Gordon Rawlinson. Left to right Dennis K. Killian, George W. Cross, Gordon Rawlinson, and Pam Jensen.

George W. Cross, President and Chief Operations Officer of IPSC; Dennis K. Killian, Superintendent of Technical Services; and Pam Jensen.

**Knox Huntsman Presented Patriot Award to George W. Cross** — Knox Huntsman, representing the Utah Committee for Employer Support of the Guard and Reserve, presented the Five Star Patriotic Employer Award to George W. Cross and IPSC on March 23, 2006. This award was based on an employer's demonstrated concern for the citizen/soldier's welfare. Nomination

for this award came from Marine Sergeant Eric Jeffs, who had been twice deployed during his employment at IPSC, and who in the written nomination expressed appreciation for the support given to him and his family. IPSC was honored by the recognition and opportunity to support Eric and others among us who so honorably serve our country.

**Unit 2 Spring Outage** — A major outage on Unit 2 was completed in April. The Unit 2 control panel was replaced with a new control desk, which had a computerized Distributed Control System (DCS). For the past year, the operators and technicians trained on a simulator, which was an exact replica of this system. The new system was designed and manufactured by ABB.



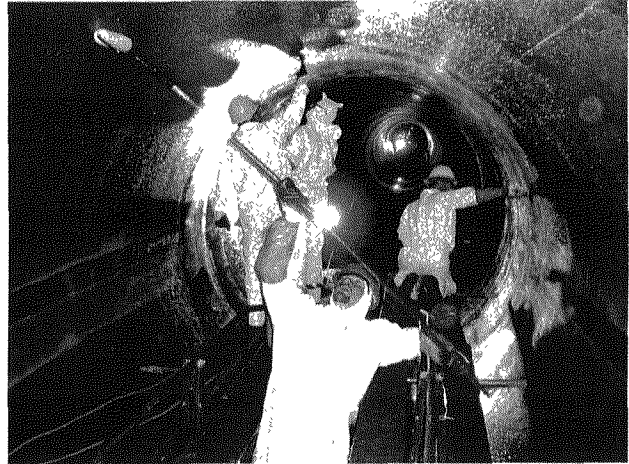
Knox Huntsman presenting George W. Cross the Five Star Patriotic Employer Award.

IPSC also replaced the Generator Control System (Generex) on Unit 2 with a new system from GE (EX2100). The new system was mounted on the second floor in a separate enclosure and had control windings (potential transformers) on the first floor. The new control cabinet and the control windings were connected to the generator with bus ducts. The new DCS system and the new Generex were both installed because parts were no longer manufactured by the original suppliers to support the systems.





Replacing the Generator Control System.



Reinforcing circulating water lines with carbon fiber.

Another project that was done this year was the reinforcement of the circulating water lines with carbon fiber. There were 420 total sections of pipe in the Unit 2 circulating water lines and 55 of those sections were reinforced this year. Electrical jumpers were also installed between each of the joints to make the pipe electrically continuous. This allowed installation of a cathodic protection system which retarded further corrosion of the pipeline.

**Production Incentive** — A production incentive of 3.4 out of 5.0 was earned for the fiscal year ending June 30. The checks were distributed to employees on July 12.

**New Risk Manager** — In August, Van Beckstrom, Jr. was selected as the new Risk Manager, replacing Pat Finlinson.

**IPSC Health Fair** — IPSC held its on-site Health Fair in September. All employees, retirees, and



Van Beckstrom, Jr. assumed the duties of Risk Manager - August 2006.



Blood was drawn for cholesterol screening.

spouses were invited to participate. The following screenings were offered at no charge to employees, and at



actual cost to retirees and spouses: cholesterol, blood pressure, glucose (diabetes), prostate-specific-antigen (PSA). Breast cancer awareness and other miscellaneous information booths were also provided.

**IPSC Received Platinum Level "Healthy Worksite Award"** — On October 4, 2006, the IPSC Staywell Program received the Platinum Level "Healthy Worksite Award" from the Utah Department of Health Council (UDOC) for Worksite Health Promotion. This program recognized



Health Fair display table of miscellaneous health information.



Leslie Rasch and Brian Coles accepting the Platinum Level "Healthy Worksite Award" for IPSC.

**Live Fire Training** — Fire Brigade Crews participated in live fire training on November 29 and December 1. Staff from Utah State Fire & Rescue Academy were on site for two days to provide education and hands-on training to IPSC's Fire Brigade Crews.



IPSC firefighter practicing putting out a fire.



Christi Palmer - Sub-for-Santa Coordinator.

**Sub-for-Santa** — IPSC employees opened their hearts and wallets to give generously this holiday season. Two hundred ninety-five gifts and \$840 cash were donated to the "Sub-for-Santa" program. This was a substantial increase from previous years.

**Number of Employees** — By the end of the year, the number of employees was 482.

## IPA

**Financing** — On June 30, the current weighted average borrowing cost was 4.74 percent.

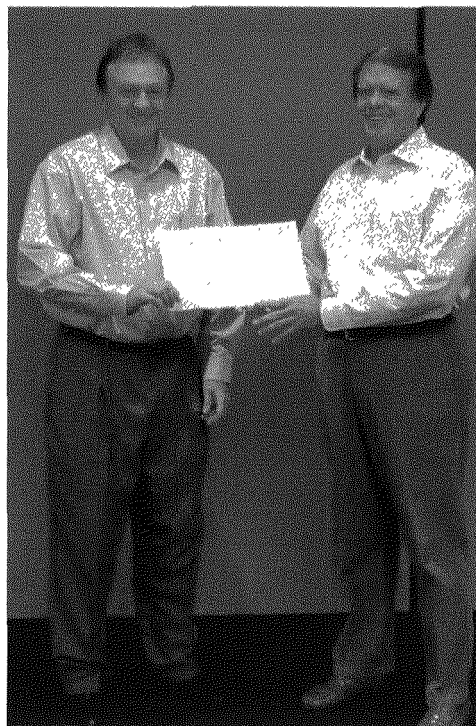
**Outstanding Student Achievement Award** — Each spring, IPA awards \$500 grants as "Outstanding Student Achievement Awards." The award recognizes those students who are positive contributors to their schools and communities. This year, each school's Scholarship Committee evaluated and selected their own student to receive this award. A check was made out to the individual students to provide financial aid in helping further their academic or vocational education.

Priscilla Thompson received the award for Millard High School. She participated in many extracurricular and community activities such as FCCLA, 4-H, National Honor Society, Math Team, Teen Council, Southwest District Ambassador, and many more, maintaining a cumulative 4.0 GPA and was her class valedictorian. Priscilla was named Sterling Scholar Regional Runner-up in mathematics for the class of 2006 and received the Engineering State 2005 Top Scholar Award. She plans to attend Brigham Young University (BYU) to receive her degree in Engineering.

The award for Delta High School went to Tyler Eliason. Tyler was involved in sports, student council, choir, and received his Eagle Scout award. He enjoyed singing and was the lead in two school plays. During his Senior year, he served as Student Body Secretary and was enrolled in ed-net classes where he earned 24 college credits. He plans planned to continue his education through distant learning during the summer and attending Snow College in the fall to earn his Associate Degree. Tyler plans to serve an LDS Mission for two years and continue his education at Utah Valley State College (UVSC) or Southern Utah University (SUU) when he returns home.

**IPA Provides Education Grant Money** — IPA announced it would provide grant money to IPSC to be used for post-high school education. The purpose of the grant was to assist dependents of IPSC employees in offsetting the costs of higher education. Both IPA and IPSC support higher education and are committed to helping others achieve their educational goals.

Reed Searle, IPA General Manager, presented George W. Cross, IPSC President and Chief Operations Officer, with an \$80,000 check to be used for the 2006-2007 school year. IPSC expressed great appreciation to IPA for the generous contribution to help IPSC employees with education expenses. In 2006, the grant money helped over 100 students. When funds are no longer available, the program will be discontinued. Grants were distributed in equal amounts between qualified applicants.



Reed T. Searle presenting George W. Cross a check for \$80,000 to be used for education grants.

## 2007 — A Year of Changes

### IPSC

**Unit 1 Spring Outage** — Projects completed during the Unit 1 Major outage in April are outlined below.

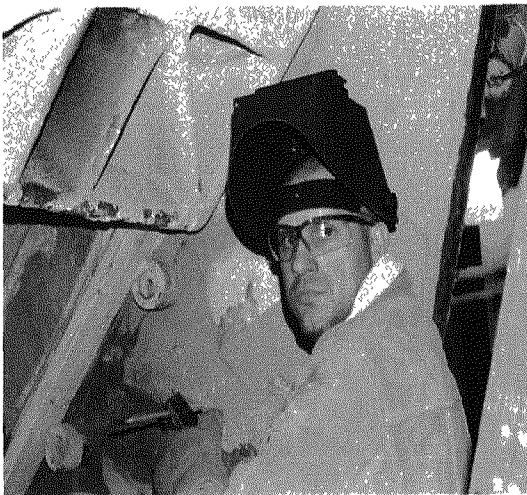
Generator Field Rewind. The Unit 1 rewind was needed due to a turn-to-turn short in field windings. The rewind consisted of disassembling the field, cleaning all components, and reassembling with new insulation. By balancing the rotor to offset the vibration caused by the uneven current loading in the rotor and limiting the reactive power output, Unit 1 was able to operate with the turn-to-turn short for two years. The exact cause of the turn-to-turn short was unknown.



Checking bearing.

Generator Excitation System Replacement. The new Generator Excitation System is located in a new air conditioned enclosure on the mezzanine level. Since the manufacturer no longer supplied replacement parts, this equipment was replaced. This same project was completed on Unit 2 in 2006.

Distributed Control System Replacement. The final phase for replacing the main control panels with new video display panels and consolidating the different control devices was completed. This same project was completed on Unit 2 in 2006.



Employee working in the baghouse.

ID Fan Drive Replacement. The final two ID fan drives were replaced with new equipment. The drives were replaced because the original supplier no longer supplied replacement parts. This work was done previously on all four drives on Unit 2 and on two drives on Unit 1.

Boiler Feed Pump Turbine Controls. Since commercial operation, the BFPT controls have caused many forced outages on both units. Replacing many of the unreliable hydraulic control devices with new redundant electronic devices should eliminate trips and derates caused by BFPT controls.

**Circulating Water Line Repairs.** To restore structural integrity lost by corrosion, 38 sections of pipe were repaired by installing layers of carbon fiber on the inside of the pipe.

**Moving the Coal Pile —** For the first time, coal delivery was not reduced during the outage. Approximately 300,000 tons of coal was moved to the long-term storage coal pile. Westside Grading was awarded the bid to help with this huge task.

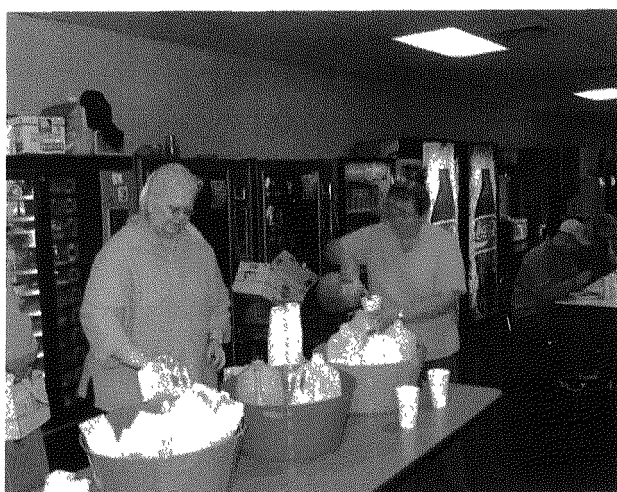


Coal being loaded into a truck to be taken to the long-term storage coal pile.



Long-term storage coal pile.

**Outage Recognition Breakfast for Employees —** As an expression of thanks for the dedication and long hours worked during the Unit 1 outage, employees enjoyed a big breakfast cooked, prepared, and served by Staff and Assistants. A drawing was also held for ten \$100 gift cards. The winners of the drawing were Kathy Barnes, Dan Corbett, John Larsen, Les Lovell, Ken Nielson, Sherida Parkinson, John Rowlette, Rick Wagstaff, Bart Wankier, and Jody Webb.



Ann Schmid and Teresa Knapp, Administrative Aides, poured drinks for IPSC employees.



George W. Cross, President and Chief Operations Officer, served food to IPSC employees.





Employees enjoyed the Outage Appreciation Breakfast.



Employees enjoyed friendships and good food at the Outage Appreciation Breakfast.

**National Employee Health and Fitness Day** — In celebration of National Employee Health and Fitness Day on May 16, employees participated in different activities throughout the day. Golf putt, basketball, and fly casting competitions were held during the morning and afternoon breaks with a variety of prizes for the winners. The "Fun Walk" was a 30-minute walk around the on-site reservoir. All participants received a T-shirt.



Employees participated in the golf putt.

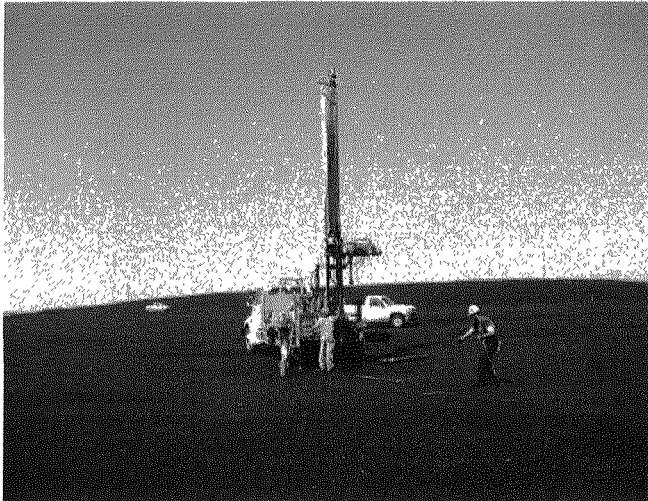


Employees were given incentives as they began the Fun Walk.



Employees walking past the on-site reservoir during the Fun Walk.





Preparing to drill boreholes into the coal stockpile.

**Coal Pile Survey** — During the first week of June, the total amount of coal stored in the stockpiles was measured as part of the annual coal inventory.

**Tonnage.** To measure the 1.6 million tons of coal spread over a hundred acres, the total tonnage was calculated by multiplying the stockpile volume by the average density of the coal in the pile.

**Density.** The contractor drilled 20 to 30 boreholes through the coal stockpiles. A nuclear backscatter instrument was lowered down the boreholes and density

measurements were taken every 2.5 feet. Several hundred measurements were required to calculate an accurate estimate of the stockpile density. These measurements were then averaged. This part of the coal inventory took approximately five days to complete.

**Volume.** Using a highly accurate Global Positioning System (GPS), measurements were taken over the entire surface of the coal pile to calculate the volume. This equipment measured the surface elevation of the pile to within one inch of the true elevation. Several thousand elevation measurements were taken by the contractor while walking or riding an All Terrain Vehicle (ATV) over all areas of the stockpile. These elevation measurements were then loaded into a computer program which calculated the total stockpile volume.



Drilling boreholes into the coal stockpile for measurements.

### **Online Training Records and**

**Knowledge** — A new in-house computer-based training system, Online Training Records and Knowledge (ONTRAK), was designed and implemented to replace the

Trinity and Pinnacle training programs. Safety/Training worked with the Technical Services, Information Technology (IT) department to develop and customize the required training courses to meet IPSC's needs. The required training courses were developed using Microsoft Power Point software which was in conjunction with the IPSC (Live) system through the use of TenFold Software.

**Flood Cleanup Help** — In response to a disastrous flash flood in Oak City on July 26, a four-man crew along with the Guzzler truck helped to aid with the flood cleanup. The Guzzler was a powerful industrial vacuum system used at IPSC to clean up coal, sludge, water, and other debris. The Guzzler was used every day and was one of the most used pieces of equipment on the plant site. With the use of the Guzzler, this crew was able to help clean mud and water out of the Craig Dutson home and offer services to others in the area, all within three to four hours, literally saving hundreds of man hours in cleanup.



The Guzzler truck was used to help clean out mud and debris after the Oak City flooding.



Residents worked to clean up mud after the flood.



Water went through many yards and homes in Oak City.

**Unit 3 Plans Canceled** — After much planning and preparation, plans to build a third 950 MW unit at IGS were canceled. Plans were to build the new unit west of Unit 2 and included sharing many of the common facilities and equipment. IPSC would have provided the operating and maintenance staff along with the services similar to Units 1 and 2. However, LADWP was required to sign contracts for the use of the existing facilities and the site. Due to a law passed in 2006 by the California legislature which forbid any new contracts for coal-fired power from any utility or municipality, LADWP opted not to sign the contracts for use of the existing facility.

**Sale of Putnam Investments** — On August 2, the sale of Putnam Investments by Marsh and McLennan Companies (MMC) to Great-West Lifeco Inc., a subsidiary of Power Financial Corporations, was completed. Putnam shareholders endorsed the sale in mid-May.

**"Buck-A-Chunk" Fund-raiser** — The EAO at IPSC, along with family and friends, opened their hearts and their wallets to donate to the families of the Crandall Canyon Mine disaster. Sharry Harper instigated this fund-raising project entitled "Buck-A-Chunk." For each dollar donated, a "Buck-A-Chunk" piece of coal was placed on the downstairs wall of the Admin Building. Over \$700 was donated within the first two days of the project, with over \$1,000 collected at the end. All donations were deposited in a Zions Bank account, along with donations from other fund-raisers, and distributed to the families of the lost coal miners and rescuers.



Sharry Harper, "Buck-A-Chunk" organizer accepting check for Crandall Canyon families from EAO Secretary, Christi Palmer.



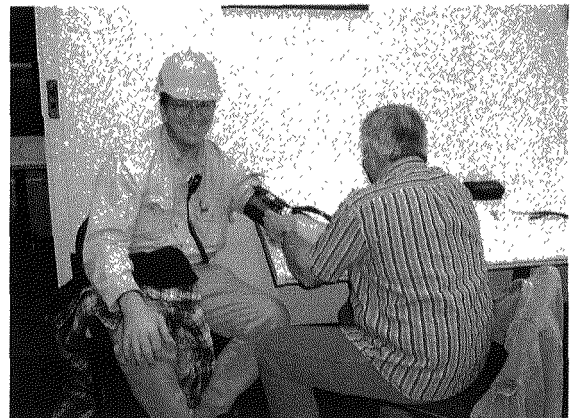
Admin wall with the first "Buck-A-Chunk" donations.

**IPSC Health Fair** — IPSC held its annual on-site Health Fair during the month of September. Employees, spouses, and retirees lined up to participate in the various screenings that were



Technician performing a bone density test on an employee.

offered, including cholesterol, PSA, glucose, blood pressure, CBC, and bone density. The cholesterol test was a fasting blood screening. Participants were asked to fast for at least 12 hours prior to the test, but needed to drink plenty of water to stay hydrated. A special machine was brought on site to check for bone density. Participants placed their foot in the machine for a few seconds and received the results of their bone density. This measurement helped in determining the risk for osteoporosis.



Employee having blood pressure checked.

The Boot Fair was held in the main parking lot of the Administration Building where several vendors had booths set up. They offered a variety of safety work boots to the employees. Lunch time classes were also held and addressed back care, nutrition and health, and healthy sleep. Employees were invited to bring their lunch and participate in these classes. There was also a display board where employees could read pamphlets and posters about different types of health information.



Employees enjoyed the lunch-time classes that were offered during the health fair.

Along with the on-site screenings, tests were conducted at IR in Springville. Participation was at its highest during this year with the following numbers: CBC - 201, PSA - 188, blood pressure - 188, glucose -232, cholesterol - 229, and bone density - 220.

**Coal Conveyor 6 Failure and Replacement** — On September 5 at 23:47, the coal yard started unloading train 07-445. At 00:17 on September 6, conveyor 6 belt failed. Inspection of conveyor 6 belt revealed that the belt split 45 inches from one side and 51 inches from the other side. The inspection also showed that a 6-inch section of belt had been torn off and wrapped around the discharge pulley on the stacker. The two split sections of belt pulled apart across the width of the belt after the discharge pulley on the stacker caused the conveyor to trip. One section broke close to the discharge pulley and the other section broke about 10 feet after the discharge pulley.

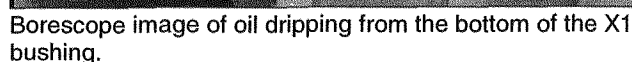
Further investigation showed a training idler was missing from its position around the 260-foot mark in zone 4. One of the three rollers was found further north around the 290-foot mark between zones 3 and 4. The training idler was found even further north around the 300-foot mark in zone 3 lodged between the belt and troughing idlers. The center pivot pin of the training idler had failed. The base was still fastened in its proper location.

Work began immediately to remove the old belt, find a replacement, and prepare for new belt installation. A manufacturer in Greece had the best lead time and the new conveyor belt order was placed. The damaged conveyor belt was removed using the Fiat Allis dozer. The conveyor belt was rewound and stored for future use on a narrow conveyor. While waiting for the new conveyor belt, every effort was made to rebuild and replace any worn parts on the conveyor system. All pillow block bearings were inspected, the liquid drive soft start was rebuilt, a new coupling was installed at the drive, and many idlers were replaced.

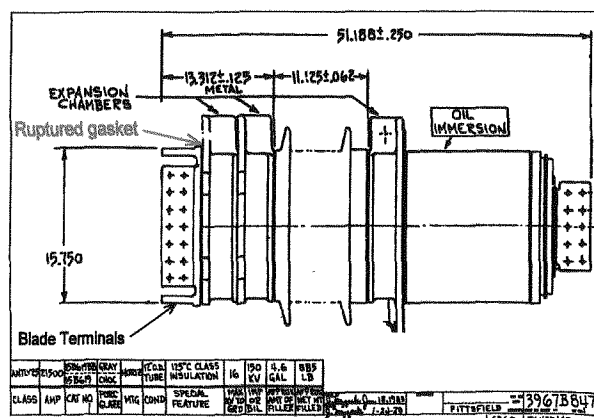
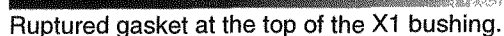
In November, the new conveyor belt was shipped in three rolls. Unfortunately, one roll was lost in the Mediterranean Sea when it fell off the ship. Manufacture of a



**Unit 1 Forced Outage - Generator Step-up Transformer X1 Bushing Oil Leak** — During the night shift on October 22, Operations personnel noted oil dripping from the isolated phase bus duct breather drain for the X1 bushing box of the Unit 1 generator step-up (GSU) transformer. The next day, a drain tube was installed to collect the leaking oil in an attempt to determine the leak rate. During the first 24-hour period, the leak rate measured approximately 0.5 gallons.



It was determined that the unit should be removed from service as soon as possible to prevent catastrophic failure of the bushing. Offline inspection of the X1 bushing showed a ruptured gasket at the interface where the expansion chambers meet the blade terminals.

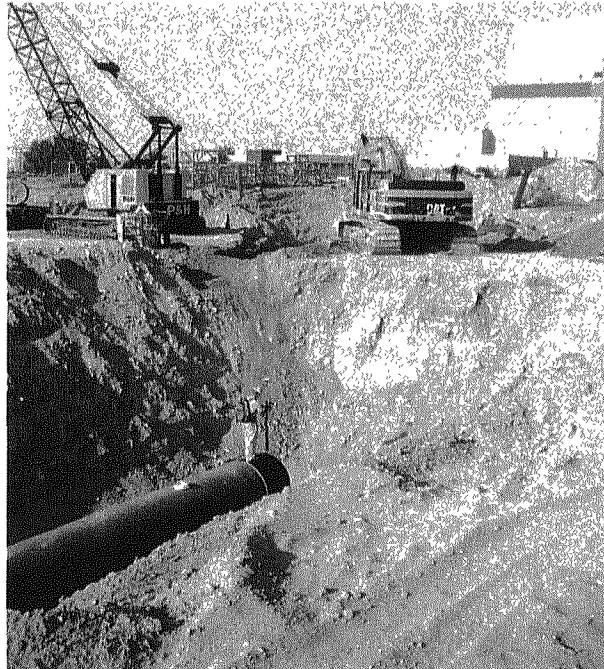


Wasatch Electric Company was hired to provide labor and the equipment to drain, process, and refill the transformer for replacement of the X1 bushing. While Wasatch Electric was mobilizing, IPSC personnel performed Doble power factor tests on the transformer and on each of the low side bushings. The Doble test results showed a significant increase in the test tap capacitance values over previous results for all three bushings. It was decided that all three low side bushings would be replaced with new bushings purchased for installation on the spare GSU transformer. Once the bushings were replaced and the transformer refilled, Doble testing was performed and the transformer was released for service.

**New 891 Carboline Coating Applied to the B Solid Contact Unit A and B Surge Tanks** — In late fall, the paint crew, along with some laborers, undertook the project of removing the old B Solid Contact Unit (SCU) A and B surge tanks coating and replacing it with a new 891 carboline coating. The contractor, Safeway, was hired to build the scaffolding. Once the scaffold was built, the painters water blasted off the old coating and then sandblasted all the areas with 2,050 bags of grit. The guzzlers were used to suck out the grit and other debris before the new coating was applied.

Twenty guzzler loads of material was removed from the tanks. The areas were wiped down and two coats of paint (670 gallons) were applied. To complete the project, 40 gallons of Tufkem was used to seal between the walls and floors in each tank.

**Surface Water Supply Line Replacement Phase II** — Phase II construction of the replacement Surface Water Supply Line was completed. Phase II consisted of 700 feet of new pipe, which started at the new valve box installed in 2006 and extended west to the laydown yard where it tied into the existing pipe. The existing line from the west to the SCUs showed no sign of failure. The new pipe was 48 inches of steel pipe with cement lining inside and out. The outside had a polyethylene tape wrapped around the metal for additional corrosion protection. The pipe was protected by an anode bed cathodic protection system.



Surface water supply line replacement.

**Dennis K. Killian Retirement** — Dennis K. Killian retired on November 29. He was employed with IPSC since May 9, 1984. He served as Superintendent of Technical Services and Vice-President. Dennis was honored at the IPSC Board Meeting on October 23, where he received a special engraved antique original Westinghouse



electric meter lamp and plaque in recognition of his many years of dedicated service. Dennis was a great asset to IPSC and the Delta community.

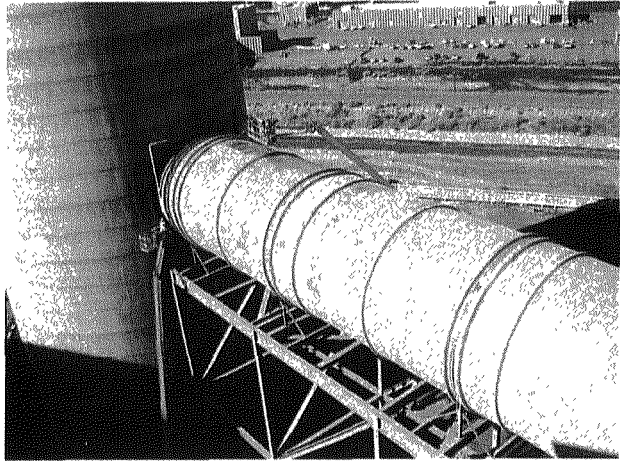


George W. Cross and Dennis K. Killian with the meter lamp and plaque presented to Dennis at the IPSC Board Meeting.



Dennis K. Killian and his wife, Trish, at Dennis' retirement celebration. Cake was made by Marcia Mecham.

**IGS Chimney Repair** — The chimney at IGS consists of a thick, heavy inner core that conveys the flue gas from the scrubber outlet duct in each unit to the top of the stack and into the atmosphere. This tube is approximately 28 feet in diameter and 2 inches thick. It is covered by a layer of foam insulation, which is encapsulated in a much thinner layer of fiberglass reinforced plastic (FRP). Over time, this outer covering developed cracks and was weakened by weathering from ultraviolet (UV) rays and from freeze and thaw cycles. There were 3,880 lineal feet of cracks repaired using five layers of fiberglass mat and vinyl ester resin. A weathered (fiberbloomed) area of 12,795 square feet was strengthened with a layer of fiberglass mat and one coat of resin. Over an acre (43,900 feet) of surface was prepared and coated with a UV resistant polyurethane paint.



Chimney repair.

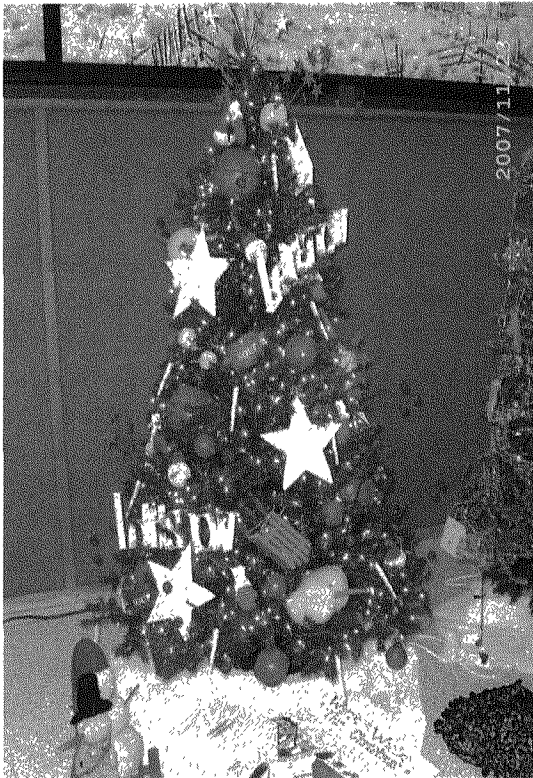
**New Technical Services Superintendent** — Wes Bloomfield was promoted to Technical Services Superintendent on November 30. Wes received an associate degree in Chemical Engineering, a bachelor degree in Mechanical Engineering, and an MBA from BYU. While going to school, he worked for W. W. Clyde as a welder. After

receiving his bachelor degree, he was hired by Pacific Gas & Electric in California where he specialized in vibration. Since that time, Wes has worked at IPSC as a Reliability Engineer, Operations Support Engineer, Maintenance Supervisor, Assistant Superintendent of Maintenance, and Assistant Superintendent of Technical Services. Wes and his wife, Larcy, have six children and have been a great asset to IPSC and the Delta community.



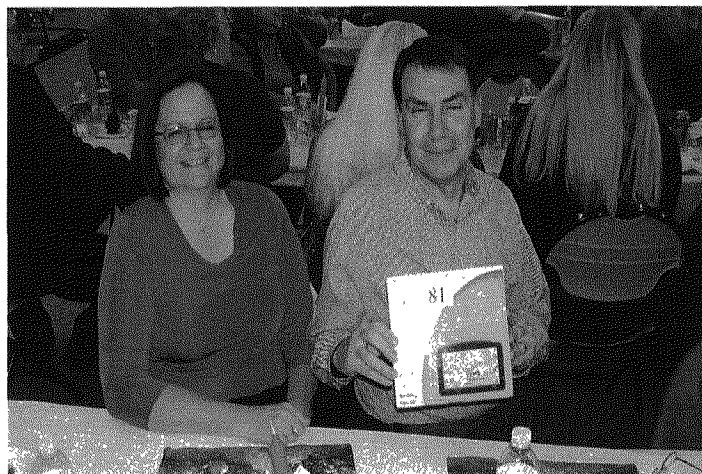
Wes J. Bloomfield assumed the duties of Technical Services Superintendent in November 2007.

**Delta City Festival of Trees Support** — IPSC joined in the Christmas spirit and purchased three Christmas trees from the Delta City Festival of Trees. Two of the trees were displayed in different locations at IPSC and one tree was given to a family in the community.



A Christmas tree purchased at the Festival of Trees.

**Annual EAO/IPSC Christmas Party** — IPSC and the EAO held its annual Christmas party on Saturday, December 8, at the Fair Building in Delta. A great dinner was served and catered by Dale Hamaker. Bone Voce provided dinner-time entertainment. The band, Muddy Boots, provided music and dancing. Drawings were held throughout the night for prizes. Jon Christensen won the grand prize, which was a GPS navigation system. A great time was had by all.



Grand prize winner, Jon Christensen and his wife.

**Number of Employees** — By the end of the year, the number of employees was 482.

**Personnel Changes** — The following personnel changes occurred during 2007:

### PROMOTIONS

<u>Employee</u>	<u>From</u>	<u>To</u>
Abbott, Justin	Laborer	Maintenance Assistant
Anderson, Dean	Laborer	Auxiliary Operator C
Bloomfield, Wes	Asst. Supt. of Tech Services	Supt. of Tech Services
Brinkerhoff, Nick	Laborer	Insulator/Sheet Metal Worker
Brinkman, Scott	Insulator/Sheet Metal Worker	Planner
Bunker, Bob	Laborer	Auxiliary Operator C
Chase, Micah	Buyer II	Buyer I
Christensen, Morgan	Laborer	Maintenance Assistant
Christensen, Jon	Supervising Engineer	Asst. Supt. of Tech Services
Cowan, Glen	Auxiliary Operator B	Fuel Equipment Operator II
Crafts, Ryan	Laborer	Maintenance Assistant
Draper, Mark	Auxiliary Operator A	Unit Operator
Dutson, Rusty	Laborer	Fuel Equipment Operator II
Frampton, Jim	Laborer	Auxiliary Operator C
George, Brandon	Warehouse Specialist	Maintenance Assistant - Elect.
Harris, Shawn	Maintenance Assistant	Maintenance Mechanic II
Hoelzle, Neno	Associate Engineer - Maint.	Engineer - Maintenance
Johnson, Lance	I&C Technician	I&E Supervisor
Keel, Bill	Electrical Technician	I&E Supervisor
Keyte, Les	Auxiliary Operator B	Industrial Painter II
Kunz, Dean	Laborer	Warehouse Specialist
Lovell, Lorne	Maintenance Assistant	Electrician
Mangelson, Aaron	Maintenance Assistant	Maintenance Mechanic II
Meinhardt, Joel	Electrician	Electrical Technician
Melville, John	Controls Mechanic	I&C Technician
Monroe, Robert	Auxiliary Operator B	Maintenance Assistant - I&C
Moody, Cynthia	Clerk - Clerical Pool	Clerk - Training
Moore, Rod	Laborer	Auxiliary Operator C
Nichols, Matthew	Laborer	Maintenance Assistant - IR
Niles, Mike	Maintenance Assistant	Maintenance Mechanic II
Nuttall, Mike	I&E Supervisor	Supervising Engineer
Palmer, Christi	Clerk - Clerical Pool	Lead Clerk - Clerical Pool
Parkinson, Wayne	Laboratory Analyst	Senior Laboratory Analyst
Priest, Joe	Laborer	Maintenance Assistant
Shipley, Mark	Unit Operator	Operating Supervisor
Smith, Brandon	Laborer	Maintenance Assistant
Stanworth, Don	Maintenance Mechanic II	Lube PM Service Worker

### PROMOTIONS (cont.)

<u>Employee</u>	<u>From</u>	<u>To</u>
Stewart, Van	Operating Supervisor	Transportation Coordinator
Sumsion, Jed	Auxiliary Operator B	Maintenance Assistant - HVAC
Taylor, Skip	Auxiliary Operator B	Auxiliary Operator A
Wankier, Bart	Laborer	Maintenance Assistant
Wardle, Brett	Fire Systems Assistant	EMT/Fire Systems Specialist
Wood, Alan	Laborer	Maintenance Assistant - Elect.
Wright, Russ	Maintenance Assistant	Electrician
Young, Richard	Laborer	Maintenance Assistant - HVAC

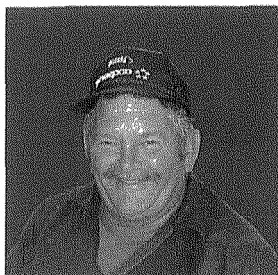
### NEW HIRES

<u>Employee</u>	<u>Job Title</u>
Anderson, Dean	Laborer
Ashman, Robert	Laborer
Diaz, Phil	Laborer
Fowles, Rick	Laborer
Jeffer, Eric	Laborer
Jones, Jason	Laborer
McPherson, Chad	Laborer
Riding, Cade	Laborer
Smith, Donald	Associate Engineer
Smith, Dusty	Laborer
Stephenson, Tom	Laborer
Styler, Michelle	Clerk Receptionist
Sumsion, Andrew	Laborer

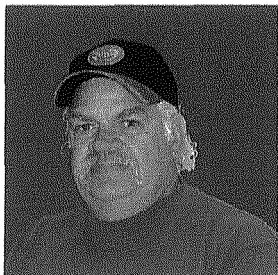
### TERMINATIONS

<u>Employee</u>	<u>Job Title</u>
Davis, Leo	Fuel Equipment Operator I
DeWolf, Ed	Electrical Technician
Jeffer, Eric	Laborer
Park, Mike	Lube PM Service Worker
Taylor, Ron	Planner
White, Amy	Clerk - Training

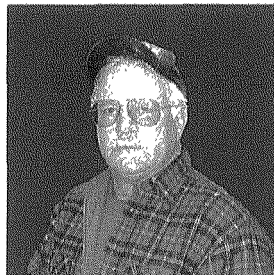
## RETIREES



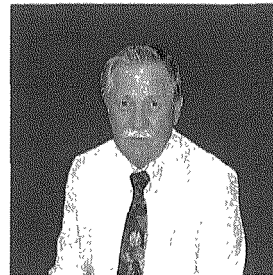
Dale P. Bond  
Fuel Equipment  
Operator I



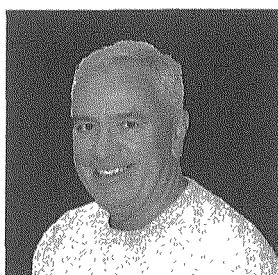
James R. Gray  
Electrical Technician



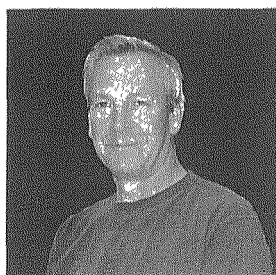
Robert (Bob) Harrison  
Industrial Painter I



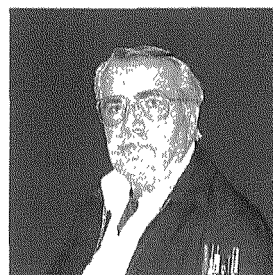
Dennis K. Killian  
Superintendent of Tech  
Services



W. Dean Larsen  
Technical Analyst



J. Larry Purvis  
Transportation  
Coordinator



Nyle W. Stott  
Electronics Technician

## IPA

**Financing** — On June 30, the current weighted average borrowing cost was 4.36 percent.

**Reed T. Searle Retirement** — Mr. Reed T. Searle, IPA's General Manager, retired in the fall of 2007. Mr. Searle had served as General Manager since 1989. Mr. James A. Hewlett, who began serving as Assistant General Manager in 1993, was appointed General Manager.

**Cliff Michaelis Retirement** — Mr. Cliff Michaelis, a member of the IPSC Board of Directors, announced his retirement in the spring of 2007. Mr. Michaelis served as a board member for Bountiful City Light & Power.



Cliff Michaelis and Eric Tharp holding cake made by Marcia Mecham.

The IPSC Board of Directors welcomed Mr. Walter Meacham as a board member replacing Mr. Michaelis.



2008

## IPSC

### Wind Damage to Unit 2 Boiler Building —

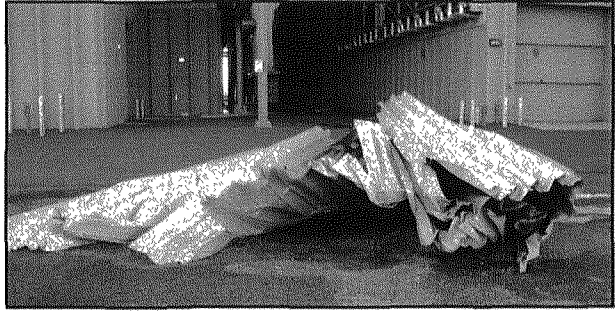
Early January 5, winds reported between 40 and 52 mph tore off approximately 3,600 square feet of siding 150 feet above ground on the building that houses the Unit 2 Boiler. Damages were estimated at approximately \$32,000. Repair work was contracted out to Thermal Tech Insulation Service, who had assisted IPSC with insulation work during the major outages each spring. IPSC mechanics installed the sky climber used by Thermal Tech and the IPSC safety crew provided rope support. A large crane was rented to assist in delivering the sheet metal and insulation to Thermal Tech employees working on the sky climber. This was a cold job with no sun shining until afternoon and a cold wind blowing each day.



Wind damage to the U2 Boiler building.

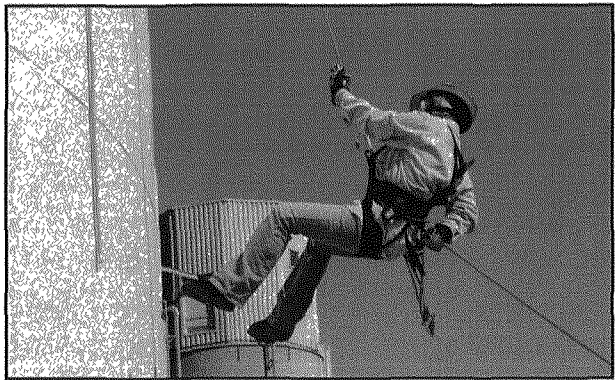


Installing siding on the Unit 2 Boiler building.



Siding torn off of the Unit 2 Boiler building by strong winds.

**Rope Rescue Training —** The annual confined space rescue training for the IPSC Rope Rescue Team was held on February 27, 28, and 29. This year's training included the IPSC Fire Brigades consisting of the four operating crews at IPSC. A training session was held for each brigade that included reviewing equipment, knot tying, mechanical advantage, patient packaging, and raising and lowering systems. A practical exercise was then held for each crew to simulate an actual confined space rescue.



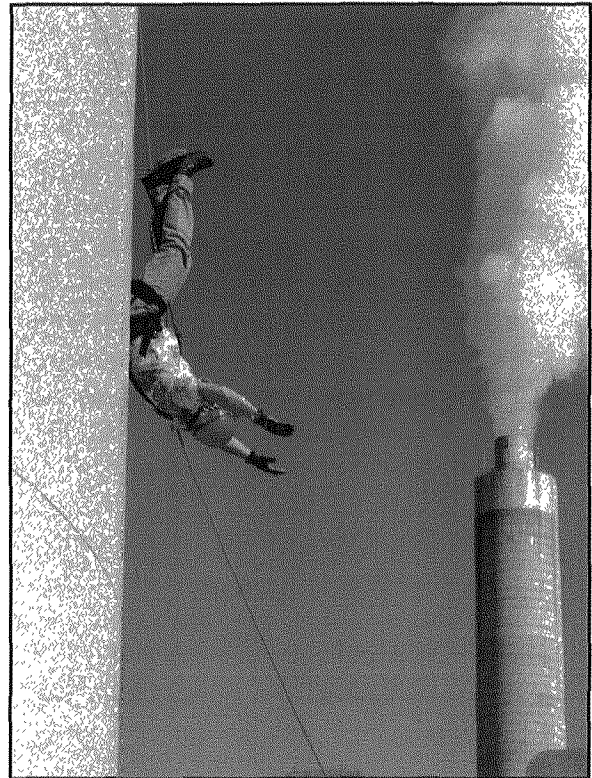
Lorie Cloward, Safety Specialist, rappelling down the Construction Water Tank.



Two members of the rescue team were assigned to take the lead with each Fire Brigade proving the support needed to complete a successful scenario. Specialty Rescue and Fire, a training company from Grandview, Texas, provided the expertise to ensure all 37 IPSC participants received a beneficial learning experience.

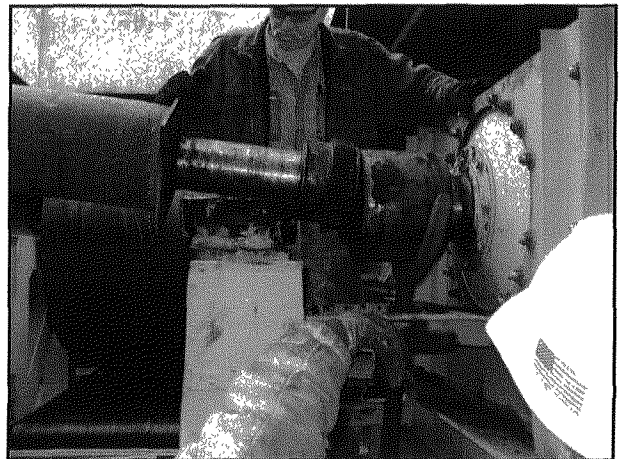


Brett Wardle checked the tension on the belay system as he rappelled down the Construction Water Tank.



Scott Aagard showed off his skills and confidence rappelling down the Construction Water Tank.

**Coal Conveyor 7 Replacement** — During the week of March 3, the active reclaim Conveyor 7 was replaced. Active reclaim received the bulk of unloaded train coal which served to fill silos via Conveyor 7 and four active reclaim rotary plow feeders. The conveyor was 72 inches wide, steel cable reinforced, and located in a tunnel directly beneath the coal stacker. At the time of the change, this conveyor was one of only two coal conveyors that had been used but had not been replaced since the plant went on-line.



Employee working on a coupling.

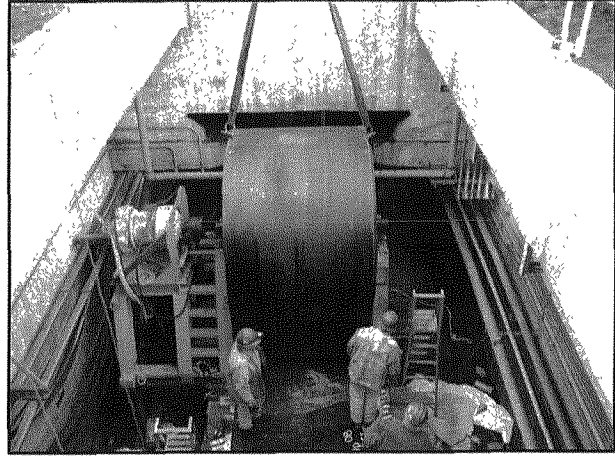
The week prior to the conveyor replacement, alternative coal paths, particularly reserve stock-out and reclaim Conveyors 3 and 4 were tested, repaired, and trained to provide maximum service during the Conveyor 7 outage.

To facilitate the Conveyor 7 replacement, a special stand had to be fabricated to hold each of two rolls of new conveyor that would be pulled into place. The new conveyor

was bolted to the old conveyor. A hydraulic winder and the new belt stand were positioned on top of the conveyor bed to pull it into place where splices could be completed on a table. Each of the new conveyor rolls weighed in excess of 17 tons. As the new conveyor was pulled into place, each of three necessary splices was prepared and vulcanized using only IPSC equipment and personnel. During the conveyor outage, other work such as idler and scraper replacements were completed. The entire job was completed in four ten-hour days.



Preparing to feed new belt on rollers.

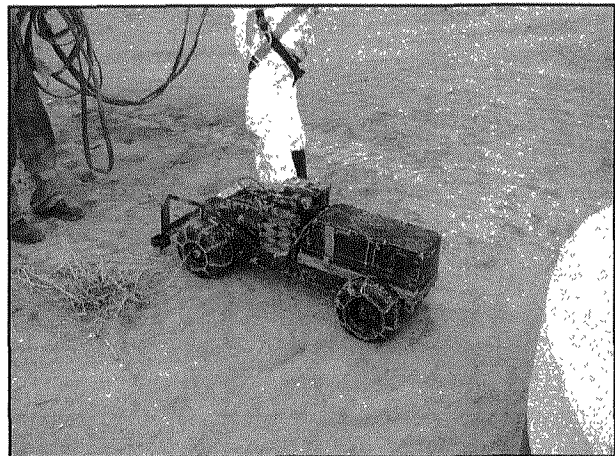


New belt being prepared to go on Conveyor 7.

**DMAD Inspection Project** — On March 13 - 22, the Pressure Pipe Inspection Company (PPIC) conducted a nondestructive evaluation of the Prestressed Concrete Cylinder Pipe (PCCP) portion of the DMAD pipeline using its patented Remote Field Eddy Current/Transformer Coupling (RFEC/TC) technology.

The inspection was performed between the DMAD pump house and the on-site reservoir covering an overall distance of 9.17 miles and 2,138 sections of pipe (only 2,102 sections were actually inspected).

The typical section of pipe was 48 inches in diameter, 24 feet long, and had approximately 316 wire wraps evenly spread across the length of the pipe.



The RFEC/TC prior to entering the DMAD pipeline.

Analysis of the data obtained during this inspection determined that 360 sections of pipe displayed evidence of wire breaks ranging from 5 to 130 breaks. There appeared to be three major corrosion areas. Most of the wire breaks and all four sections with 50

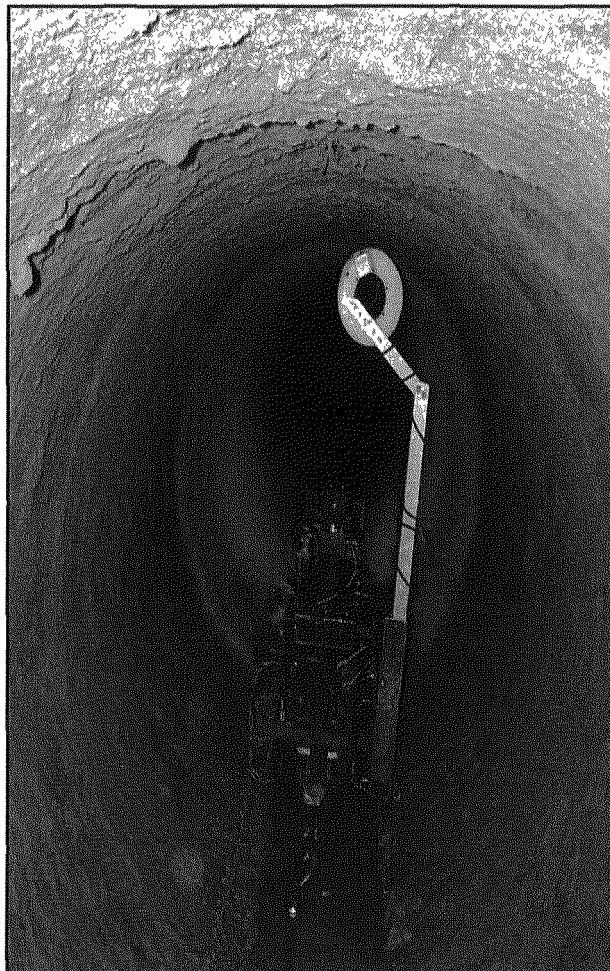


IPSC employees and contractors lowering the RFEC/TC into the DMAD pipeline.

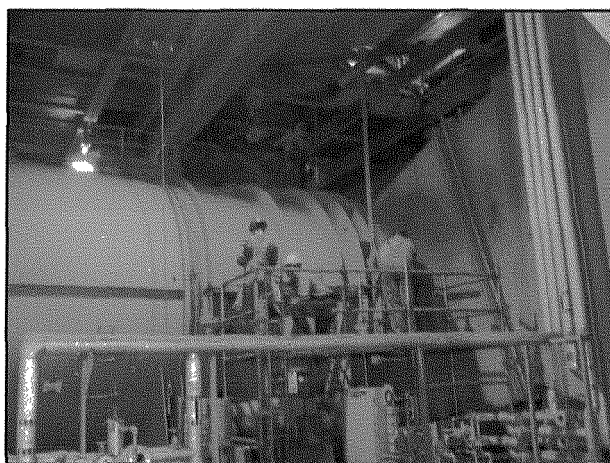
or more breaks were located in a two-mile length of pipe starting at the on-site reservoir going south toward DMAD. The next largest corrosion area started approximately two miles from the DMAD pump house continuing north one mile. The third and smallest corrosion area was between the other two areas.

**Spring Outages** — A minor two-day maintenance outage on Unit 1 was held in March. This outage consisted of 123 work orders, 2,440 man-hours, and \$148,000.

The major outage on Unit 2 ran for approximately thirty days. This outage included 2,058 work orders, 53,370 man-hours, and \$7,400,000. Repairs and maintenance were completed on much of the equipment. All of the scheduled maintenance projects, inspections, cleaning, and testing were also completed. Many different techniques were used to test and check for high stress areas to allow time to make repairs before failure.



The RFEC/TC inspecting the interior of the DMAD pipeline.

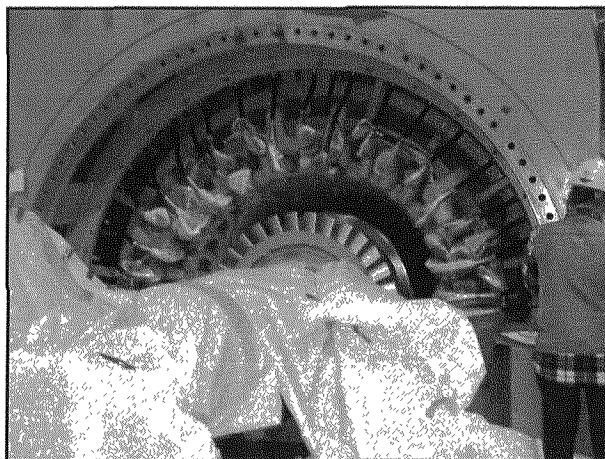


Employees working on the FD Fan.





An overhead view of the generator.



A close-up look at the generator.

### **Gordon Rawlinson Promoted to Colonel**

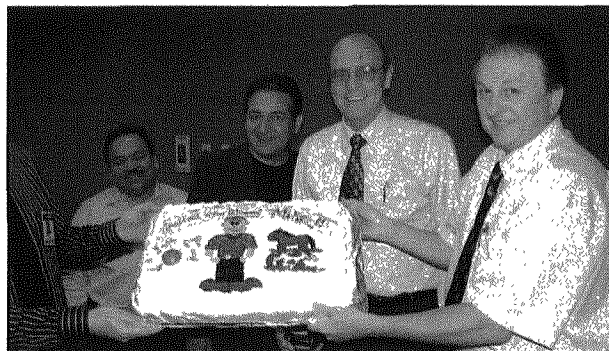
— Lieutenant Colonel Gordon Rawlinson was promoted to Colonel on May 17 at a ceremony held in Denver, Colorado. Gordon considered himself fortunate to be selected for this promotion since the Colonel Board selected only 7 percent of the applicants. This was the lowest selection rate in the US Army Reserve history.



Colonel Gordon Rawlinson being congratulated on his promotion.

### **IPSC's Own Bowling "Alley"**

— Mike Alley received the Senior A Division Bowler of the Year award. This award was given to the person who exceeded his/her own personal average during a six-game tournament. In order to compete in the Bowler of the Year Tournament, participants must have been selected as "Bowler of the Month" at least once during the year by having the highest average score during the month. Mike had been bowling with the same league for the past 15 years and had received the Bowler of the Month award at least once during each of those years. He started his bowling career back in the early 1960s. Since that time, Mike had hit a score of 290 several times, but never hit the perfect 300. Mike's next goal was to hit a perfect 300 score.



Mike Alley was presented a cake by members of the Board of Directors and IPSC President and Chief Operations Officer George W. Cross.

**Mike Alley Retires** — Mike Alley, Superintendent of Maintenance, retired on June 26. Mike began his career with IPSC

on June 10, 1985. He served as a Planner/Scheduler, Associate Engineer, Maintenance Supervisor, Assistant Superintendent of Maintenance, and Superintendent of Maintenance. Mike was honored at the IPSC Board Meeting on April 22 for his many years of dedicated service. Mike was a great asset to IPSC.

**New Department Heads — Wes** Bloomfield moved into the Maintenance Superintendent position the end of June. He took the place of Mike Alley upon his retirement. Wes had been serving as the Superintendent of Technical Services.



Jon P. Christensen assumed the duties of Technical Services Superintendent in June 2008.



Wes J. Bloomfield assumed the duties of Maintenance Superintendent in June 2008.

Jon Christensen moved into the position of Superintendent of Technical Services from the Assistant Superintendent of Technical Services. During his employment with IPSC, Jon had also served as Lead Engineer and Supervising Engineer.

**Production Incentive Program —** A production incentive of 3.94 out of 5.0 was earned for the fiscal year ending June 30. The checks were distributed to employees on July 9.

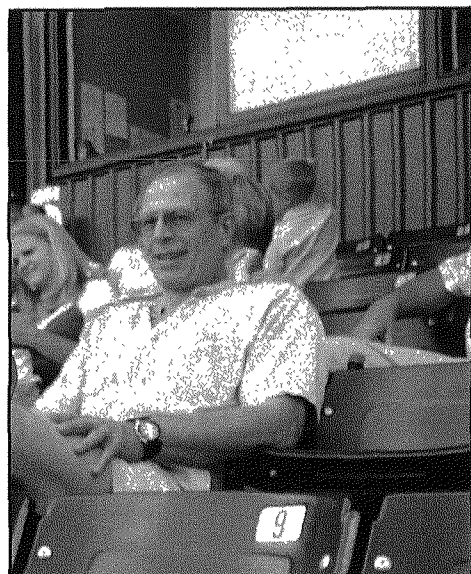
**New 401(k) Provider —** Towers Perrin took the lead in assisting the Retirement and Savings Committee through an in-depth analysis/search for a new 401(k) provider. After several weeks of review and research, M&I Institutional Trust was selected to be the new 401(k) provider. The transition from Putnam/Mercer to M&I Trust took place on July 1.

**Kelcie Thomas Project** — Kelcie Thomas, daughter of IPSC employee Scott Thomas, took on an ambitious project to prevent childhood obesity in the community. Her goal was to provide as many children as possible with items that promote physical fitness activities, such as basketballs, jump ropes, etc. She also tried to raise the general public's awareness about obesity. IPSC was happy to be able to play a small part in this worthy cause by donating jump ropes, frisbees, and hula-hoops. Kelcie was able to hand these items out to school children in the community.

**Summer Party** — An "All American" summer party of baseball and barbeque was held at the Orem Owlz baseball stadium on August 2. Those attending enjoyed hotdogs, hamburgers, and barbequed chicken with all the trimmings along with the game between the Orem

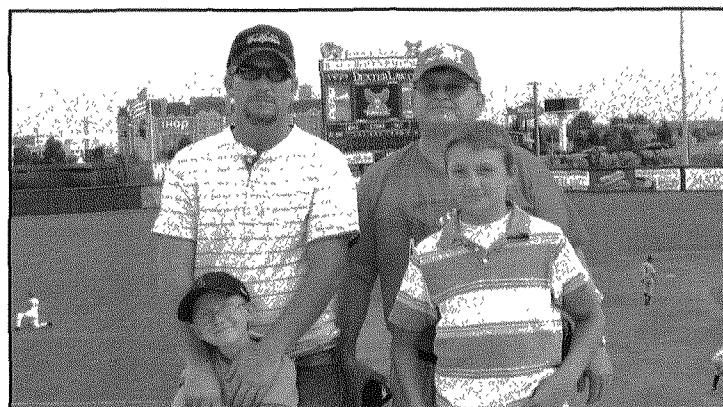


Brian Coles presented Kelcie Thomas with items donated by IPSC.



Rob Guichard enjoyed watching the Orem Owlz baseball game.

Owlz and the Idaho Falls Chukars. Drake Wardle, grandson of IPSC employee Sam Wardle, threw the first pitch of the game—a strike. A great time was had by all.



Jason, Sam, Austyn, and Drake Wardle enjoyed attending the Orem Owlz baseball game.

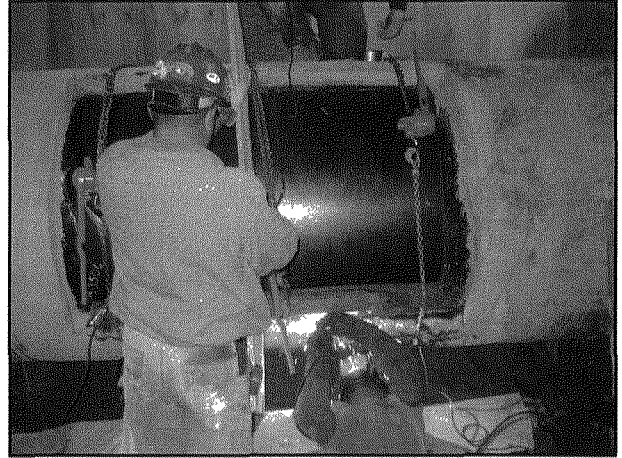
**DMAD Pipe Rupture** — On August 26, there was a rupture in the DMAD pipeline approximately 350 feet downstream from the DMAD pump house. The rupture was approximately 4 feet long and extended approximately 3 feet up toward the top of the pipe. The failure of the pipe occurred at the centerline of the pipe located on the west side. The steel can in the area of the rupture showed signs of thinning from external corrosion. The reinforcing wires were completely corroded extending down toward the



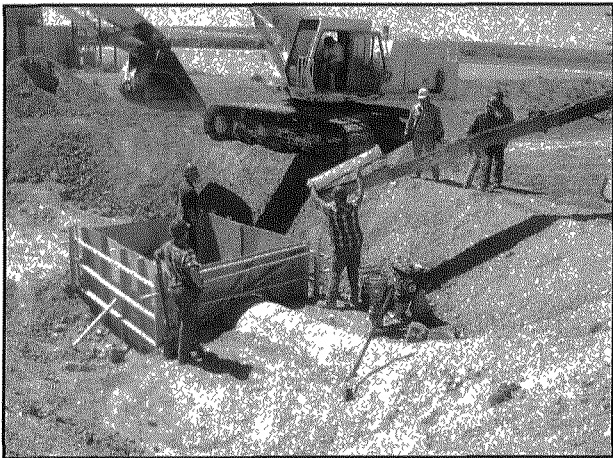
bottom of the pipe. Work continued around the clock to create a structurally sound temporary repair. The damaged section was replaced several weeks later.



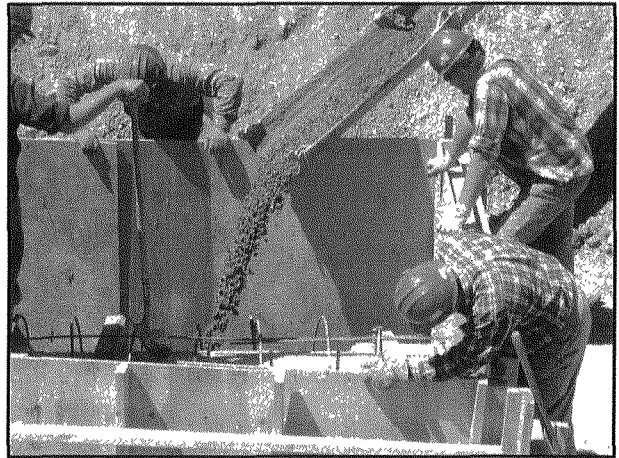
Employee assessing damage to pipe and taking measurements in preparation for the temporary repair.



Employees welding steel pipe replacement in broken section of pipe.

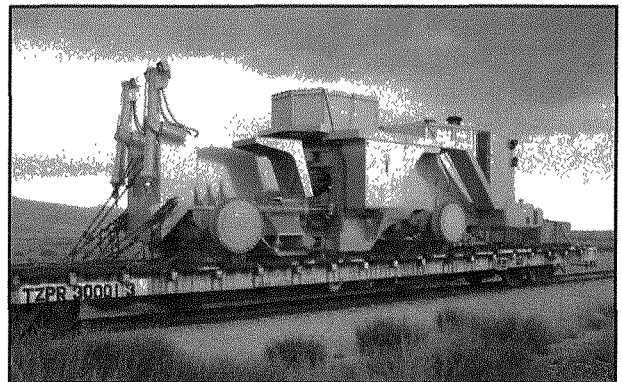


Employees preparing to pour cement for the temporary pipe repair.



Cement being poured into forms for the temporary pipe repair.

**New Dozer** — The second of two Letorneau dozers was retired and replaced by a new Caterpillar 854 dozer. Because of the large size of the new dozer, it was brought in on three different railcars and assembled on site. The two original dozers were purchased in 1984. One of the original dozers was retired in 2002 and used for parts to prolong the life of the other one. It was also replaced by a Caterpillar 854 dozer.



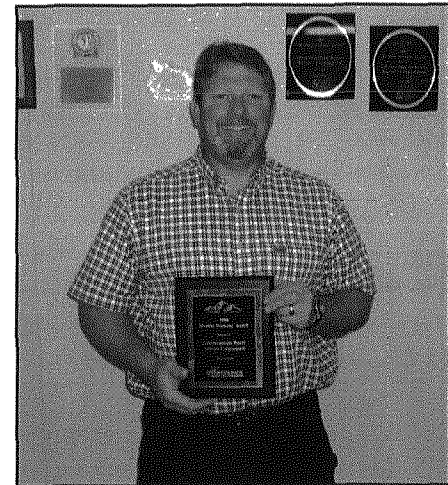
Part of the new dozer which arrived by railcar.

**Mike Mooney Received Award of Merit** — On September 19, Mike Mooney accepted an award on behalf of IPSC. The Utah Safety Council (USC) Awards Committee selected IPSC to receive the Award of Merit for its achievements in workplace safety performance. To be considered for this award, the organization's incident rate must be lower than the national average for the industry, continuous safety performance improvement must be demonstrated, and essential elements of a safety and health program must be in place.



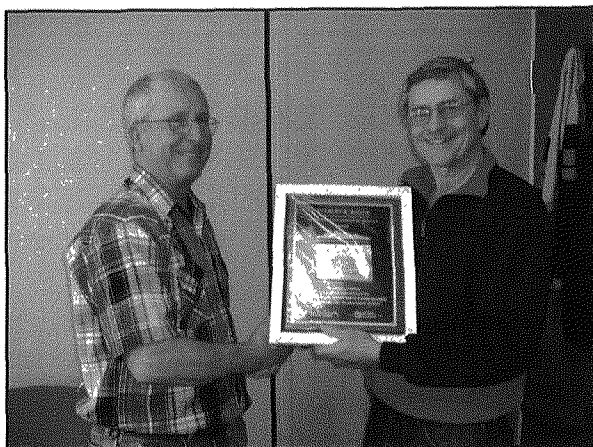
Mike Mooney accepted Award of Merit for workplace safety performance.

**Platinum Level "Healthy Worksite Award"** — In early October at an awards banquet, the UDOH Council for Worksite Health Promotion presented Brian Coles the Platinum Level "Healthy Worksite Award" for the IPSC Staywell Program. This year marked 14 consecutive years for IPSC receiving an award from the Governor's Council. The purpose of the program is to assist companies in progressing each year to the highest level. IPSC started with the entry level award in 1995. By following recommended guidelines, the quality of the Staywell Program advanced from the entry level to silver, gold, gold plus, and platinum. For the past three years, IPSC was awarded the Platinum Level.



Brian Coles received the Platinum Level Award for the IPSC Staywell Program.

**New Benefits Analyst** — Stan Koyle retired on December 29 after serving for over 23 years as the Administrative Analyst II over benefits for IPSC. Stan was a great asset to IPSC. Lisa Bradfield was promoted as the new Administrative Analyst II.



Stan Koyle received retirement plaque from Roger W. Stowell, Manager of Support Services.



Lisa Bradfield assumed the duties of Administrative Analyst II - Benefits in December.

**Number of Employees** — By the end of the year, the number of employees was 485.

**Personnel Changes** — The following personnel changes occurred during 2008:

### PROMOTIONS

<u>Employee</u>	<u>From</u>	<u>To</u>
Allen, Brad	Maintenance Mechanic II	Maint. Mechanic/Certified Welder
Anderson, Dean	Laborer	Auxiliary Operator C
Bliss, Braden	Laborer	Maint. Assistance - Mechanical
Bloomfield, Wes	Supt. of Tech Services	Superintendent of Maintenance
Bradfield, Lisa	Clerk - Accounting	Buyer II
Bradfield, Lisa	Buyer II	Administrative Analyst II-Benefits
Bunker, Robert	Auxiliary Operator C	Auxiliary Operator B
Carroll, Cory	Elevator A/C Mechanic	Electrical Technician - HVAC
Chase, Kiley	Laborer	Associate Technical Analyst
Chase, Micah	Buyer II	Buyer I
Christensen, Jon	Asst. Supt. of Tech Services	Superintendent of Tech Services
Cowan, Glen	Fuel Equipment Operator II	Fuel Equipment Operator I
Crop, Nathan	Associate Engineer	Engineer
Dean, James	Laborer	Auxiliary Operator C
Draper, Zane	Maint. Assistance - Mechanical	Maint. Mechanic II
Elmer, Connie	Clerk - Purchasing	Buyer II
Finlinson, Rita	Clerk - Clerical Pool	Clerk - Accounting
Griffiths, Boyd	Laborer	Auxiliary Operator C
Jensen, Kyle	Laborer	Maint. Assistance - Mechanical
Johnson, Mike	Maintenance Mechanic II	Maint. Mechanic/Certified Welder
Jones, Jason	Laborer	Auxiliary Operator C
Marshall, Michael	MT Mechanic/Certified Welder	Maintenance Supervisor
McPherson, Seth	Laborer	Maintenance Assistant - HVAC
Mooney, Joshua	Laborer	Auxiliary Operator C
Mooney, Ron	Laborer	Maint. Assistance - Mechanical
Moore, Rodrick	Auxiliary Operator C	Auxiliary Operator B
Nielson, Ken	Lead Engineer	Supervising Engineer
Niles, Robert	Maint. Assistance - Mechanical	Maint. Mechanic II
Nuttall, Mike	Supervising Engineer	Asst. Supt. of Tech Services
Peterson, Callie	Clerk - Receptionist	Clerk - Clerical Pool
Peterson, Callie	Clerk - Clerical Pool	Clerk - Purchasing
Rawlinson, Gordon	Technical Analyst	Lead Technical Analyst
Riding, Randy	Maintenance Mechanic II	Maintenance Mechanic I
Rowlette, Justin	Maintenance Mechanic II	Maintenance Mechanic I
Schena, Boyd	Maint. Assistance - Mechanical	Maint. Mechanic II
Smith, Dusty	Laborer	Maint. Assistance - Mechanical

**PROMOTIONS - continued**

Stanworth, Gene	Maint. Assistance - Mechanical	Maint. Mechanic II
Thompson, Bradley	Planner/Scheduler	Operating Supervisor

**TRANSFERS**

<b><u>Employee</u></b>	<b><u>From</u></b>	<b><u>To</u></b>
Draper, Steven	Operating Supervisor	Planner/Scheduler

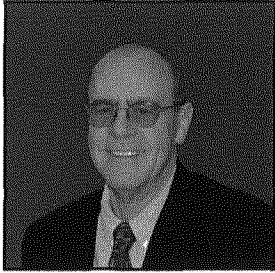
**NEW HIRES**

<b><u>Employee</u></b>	<b><u>Job Title</u></b>
Cross, Sarah	Clerk - Receptionist
Finlinson, Nick	Laborer
Henrie, Gina	Clerk - Receptionist
Hintze, Stephen	Laborer
Huber, Steve	Laborer
Hughes, Rendon	Laborer
Lovell, Hans	Laborer
Shepherd, Dustin	Laborer
Smith, T. Brent	Associate Engineer
Steele, Michael	Associate Engineer
Stumph, Dallas	Laborer
Turner, Michael	Associate Engineer
Webb, Brandon	Laborer

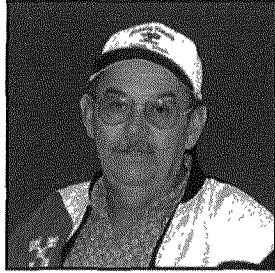
**TERMINATIONS**

<b><u>Employee</u></b>	<b><u>Job Title</u></b>
Hamilton, Howard	Lead Engineer
Rawlinson, Gordon	Lead Technical Analyst
Suffern, Greg	Maintenance Mechanic I

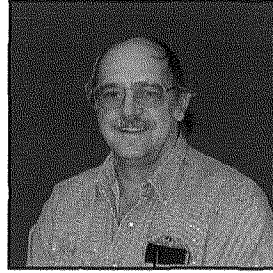
## RETIREES



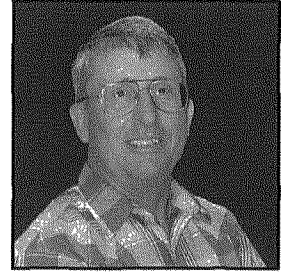
George M. Alley  
Superintendent of  
Maintenance



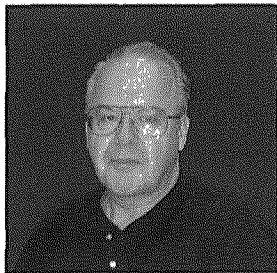
Val K. Christofferson  
Maintenance Mechanic I



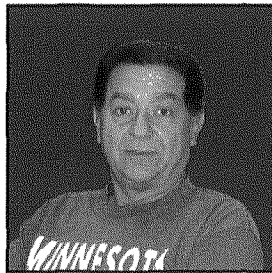
James Kelsey  
Maintenance Supervisor



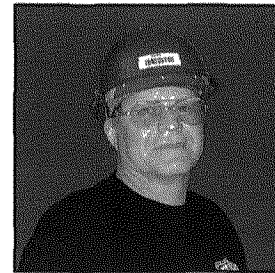
Stanley R. Koyle  
Administrative Analyst II  
- Benefits



John R. Larsen  
Buyer I



Vincent F. Massa  
Electrical Technician -  
HVAC



L. Dale Palmer  
Maintenance Mechanic/  
Certified Welder

## IPA

**Financing** — On June 30, the current weighted average borrowing cost was 4.17 percent.



2009

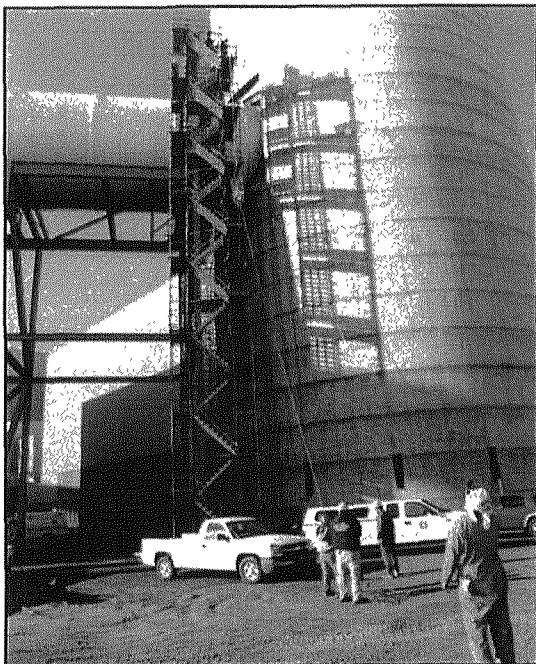
## IPSC

**Unit 2 Mini Outage** — There was a one-week mini outage on Unit 2 during the week of March 7 - 14, to ensure that the Unit could run until the next major outage scheduled in the fall of 2010. The major work completed during the outage included boiler slag removal, boiler tube replacement in the convection pass, boiler inspection and repair, coal feeder and pulverizer inspection and repair, and condenser expansion joint repair. Other smaller jobs were also completed to ensure the reliability of the Unit.

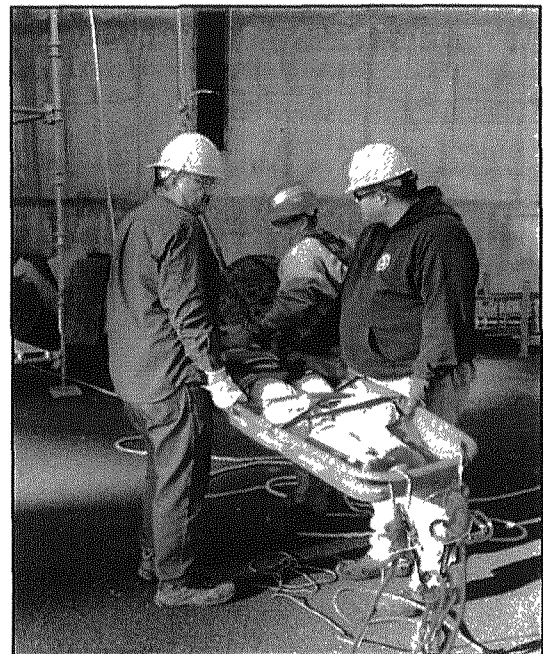


Dave Hahn was properly tied off while working on equipment during the Unit 2 mini-outage.

**Rope Rescue Drill** — The Safety Section used the scaffolding along the east side of the stack to aid in training their rope rescue personnel. The team practiced evacuating a "victim" from the uppermost levels using a litter in different configurations. They also used different procedures to extract "victims" (sometimes the mannequin and sometimes each other) from various other pieces of equipment and structures. The Rope Rescue Team is a valuable asset to IPSC and to the entire community.



Scaffolding used in rope rescue training.

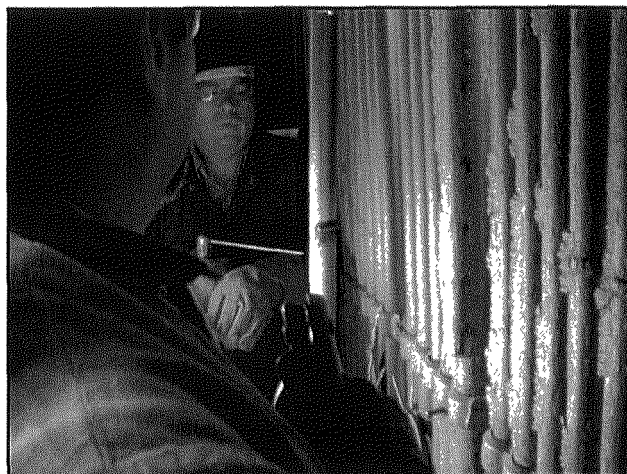


Operations employees used a litter to transport a "victim" to safety.



### **Boiler Tube Leaks — Unit 2**

experienced two boiler tube leaks within a two-week period. The first one occurred on March 19 and the second on March 25. The center tube in the Superheat Outlet Pendent Panel appeared to fail because of embrittlement issues related to short- and long-term overheating of the 347 Stainless Steel (SS) tubes in this area. The overheating may have been caused by a large clinker in the middle of the boiler panels that was redirecting the hot gases to the side wall of the boiler. The clinker was removed during the Unit 2 mini-outage, which was before the tube leaks occurred. In mid-April, a forced outage on Unit 2 was caused by another boiler tube leak during the Unit 1 major outage. Once again, IPSC employees were able to fix the leak and get the Unit back online in a timely manner.



Employees repaired boiler tube leaks on Unit 2.

**Scrubber Modifications** — With the help of AP&F, IPSC began a five-year scrubber modification project. This included replacing the coatings on the reaction tank, replacing the rubber that coats the scrubber laterals and headers, and replacing the gunnite on the Course 2 slope. After the coatings were removed, the underlying steel was repaired or replaced. These major coating systems were originally designed to last for approximately 15 years and had performed well, but needed to be replaced.



Hole cut in reaction tank ceiling to remove corroded and thin spots.



Extensive corrosion underneath the reaction tank mixer gearbox. This picture shows a support beam on the right and the mixer shaft coupling on the left.

**Unit 1 Major Outage** — April was a very busy month for IPSC employees and contractors. The 2009 Unit 1 Major Spring Outage began on March 29 and returned to operation on April 27.

During the outage, repairs and maintenance were completed on much of the equipment. Along with all of the scheduled maintenance projects, inspections, cleaning and testing were also completed. The following are a few highlights of what took place during the outage:

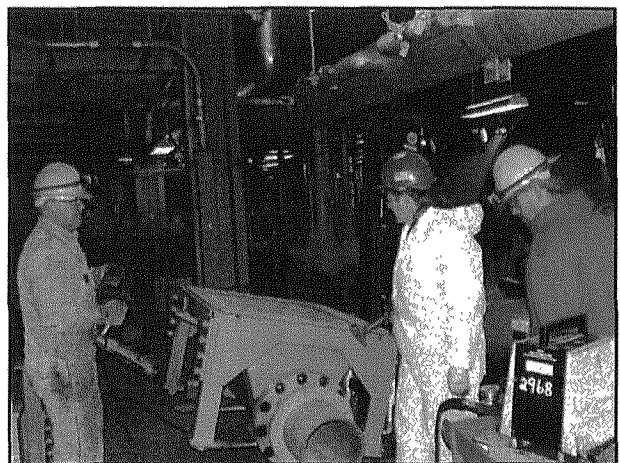
- Rebuilt nine sections of the Circulating Water (CW) lines with carbon fiber reinforced FRP. This was a continuation of repairs to the concrete steel reinforced lines.
- Replaced 140 boiler tubes, shielded over 600 tubes, and pad welded approximately 20 tubes.
- Installed five new boiler cleaning access doors to allow better access for removal of clinkers and slag buildup in the intermediate pendants in the boiler.
- Upgraded the Coal Feeder 1A weigh bridge.
- Replaced obsolete vibration-monitoring equipment of Forced Draft (FD), ID, and Primary Air (PA) fans.
- Replaced scrubber module F inlet and outlet expansion joints, main outlet duct expansion joint, and outlet duct coatings on south end.
- Upgraded Phase 6 ABB controls. Replaced Unit 1 main control room 584 PLCs with ABB DCS I/O



Operations employees packing valves.



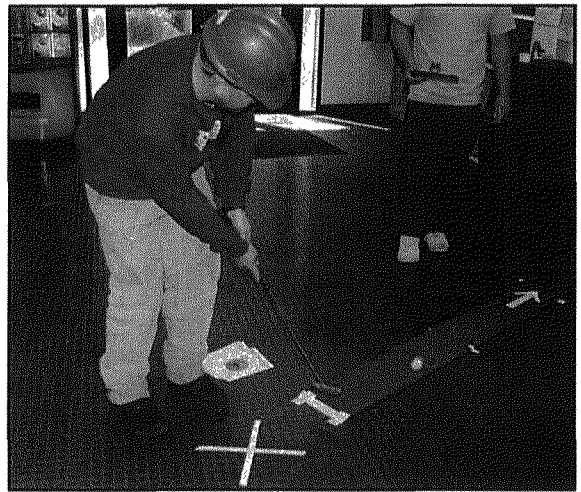
Installing one of the Riser Gates in the Cooling Tower.



Employees preparing to install the Bottom Ash Crusher.

interface devices. This was a continuation of the controls upgrade of the obsolete Modicon controllers.

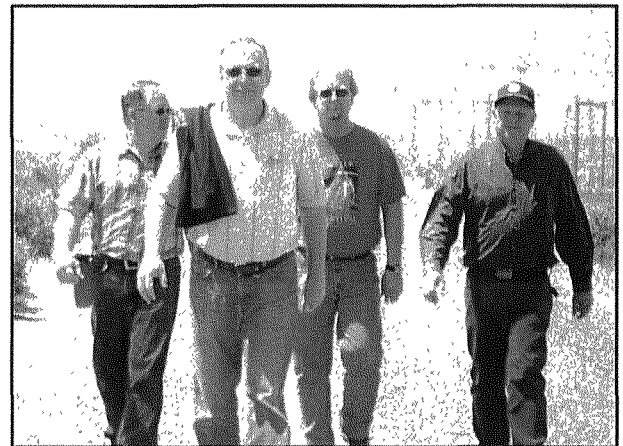
**Employee Health Day and Fun Walk —** IPSC's annual Health and Fitness Day was held on May 20. Several different activities were held during breaks to help encourage employees to participate in physical activities. Some of the activities included golf putt, basketball, darts, tennis serve, and max bench press reps. During the lunch break, approximately 200 employees and spouses participated in the "Fun Walk."



An employee tried his luck with the golf putt.

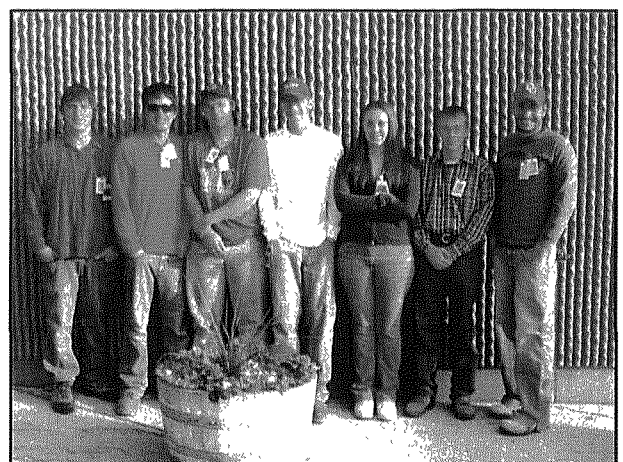


A couple of employees enjoyed a nice jog during the IPSC Fun Walk.



Maintenance employees participated in the IPSC Fun Walk.

**Summer Interns —** IPSC hosted over a dozen Summer Interns this year in cooperation with the Department of Workforce Services (DWS) under the American Recovery and Reinvestment Act of 2009 (The Stimulus). This program was designed to help young adults, 18- to 24-years of age, find summer employment where they could learn job skills and work ethics during the tough economy. These temporary workers worked for approximately three months primarily as laborers, but with some working in the Lab,



Some of the interns who participated in the DWS Stimulus program.

Engineering, and Drafting Sections. After seeing that applicants met the criteria of the program, DWS matched them with available jobs in the community where they gained work experience and were paid wages by the program. IPSC was given the opportunity to receive extra help and provide qualified young adults valuable training and experience in a favorable environment near home.

**Unit 2 Roof Fire** — On June 18, employees smelled smoke as they came out of the elevator on the 11<sup>th</sup> floor of Unit 2. As they looked around, they noticed sparks coming from the roof and notified the Fire Brigade. Fire axes were brought to the scene and two fire hoses were in operation on the 11<sup>th</sup> floor and two on the 8<sup>th</sup> floor. Responders used fire axes to open the roof around the vents to check for fire extension and smoldering.

George Cross reported, "The fire is believed to have started in the outside wall as a result of sparks from arc gouging the 204B Redler wear plates during an overhaul. Sparks evidently got into the metal seams where coal dust smoldered and eventually caught a



Employees trying to extinguish fire on Unit 2 11<sup>th</sup> floor roof.



Roof damage on Unit 2 11<sup>th</sup> floor roof.

4" x 6" wood roof support beam on fire. The employees working in the area had a hot-work permit and were following the requirements of the permit. In the future, the area and walls will be wet down after a couple of hours to make sure coal dust in the metal walls doesn't smolder and catch on fire. The damaged roof material was removed and the area cleaned up in preparation for repairs."

The IPSC response systems worked efficiently and effectively to contain any potential threat to the Unit and to personnel. The speed of response in this incident is indicative of the preparation and skills of our emergency response teams.



**Production Incentive Program** — A production incentive of 4.07 out of 5.0 was earned for the fiscal year ending June 30. The checks were distributed to employees on July 15.

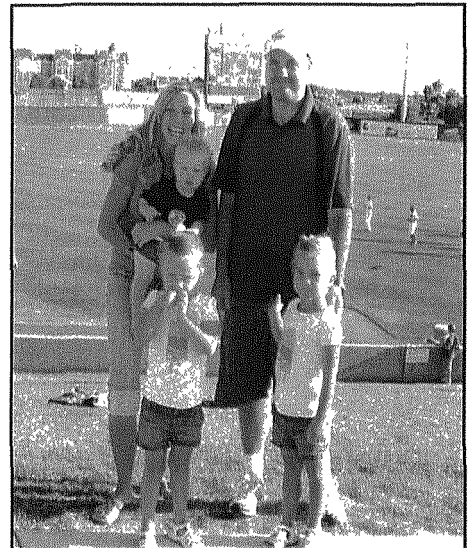
**Change in Medical Insurance Provider** — After many hours of research and comparisons, IPSC selected Tall Tree Administrators, utilizing the WISE Provider Network, as their new medical plan beginning July 1. The new plan included a new preventive benefit that paid up to \$1,000 a person for preventive services such as annual physicals, eye exams, hearing exams, colonoscopies, mammograms, well-baby care, etc. The vision hardware benefit, which could be used toward eyeglasses or contacts, was increased to \$220 every other year.

**New Union Contract** — After approximately nine months of negotiations, a new three-year Union contract was ratified and signed on July 10.

**Benefit Changes** — The following employee benefit changes went into effect during July:

- The Wellness Benefit was calculated on the first 80 hours of Short-Term Disability (STD) usage. The plan paid 50 percent of the first 80 hours of the STD benefit not used during the year.
- Corrective action that had any suspension time attached to it, remained in the employee's personnel file for three years.
- An additional floating holiday was available to employees based upon the work rules.
- The meal allowance was increased to \$11.50.
- The short shift was eliminated.
- The default Qualified Joint and Survivor Annuity (QJSA) benefit for the pension plan was increased from 50 percent to 100 percent.

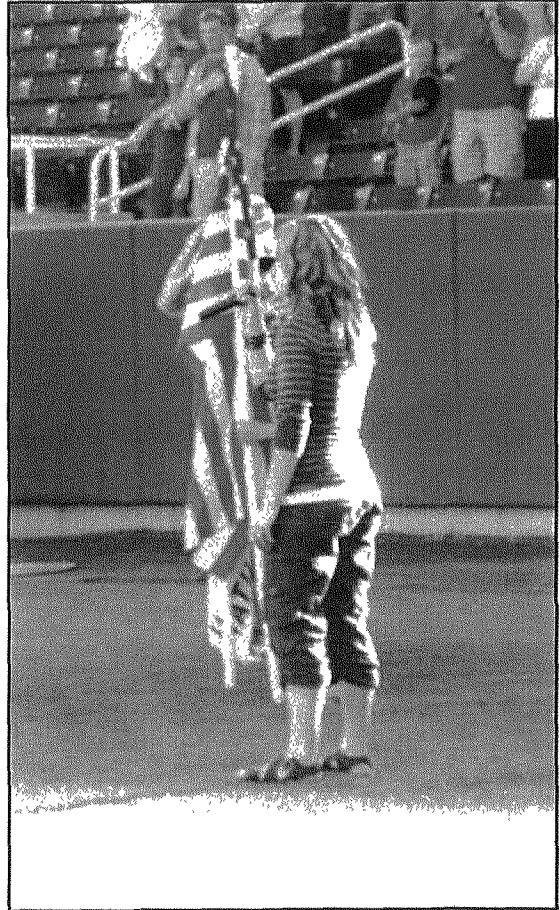
**Summer Party** — Once again, IPSC employees and families enjoyed an outing at an Owlz baseball game for the annual IPSC Summer Party. The party was held on August 8 in Orem, Utah. Megan Huber, wife of Steve Huber, sang the National Anthem and Lydia Hintze, wife of Steve Hintze, threw the first pitch.



Don Smith and family enjoyed attending the IPSC summer party at the Owlz Stadium.



Kids enjoyed meeting Hootz and Holly.



Megan Huber, wife of Steve Huber, sang the National Anthem at the Owlz game.



Lydia Hintze, wife of Steve Hintze, threw the first pitch.

**New Electronic Communication System** — A new Electronic Communication System (ECS) was installed in the USB lunchroom in August. This ECS was a duplicate of the system that was installed in the downstairs Admin lunchroom in 2006. The system was automatically updated from the Marlin Company with workplace messages. Custom in-house messages could also be uploaded to the system.

**IPSC Health Fair** — IPSC held its fifth annual Health and Safety Fair in September. Education topics included selecting better shoes and boots to decrease pain and fatigue, being a better health consumer, eye health and safety, flu prevention and hand washing, dealing with major changes or loss in life and the grieving process, prostate health, and cardiac risk.



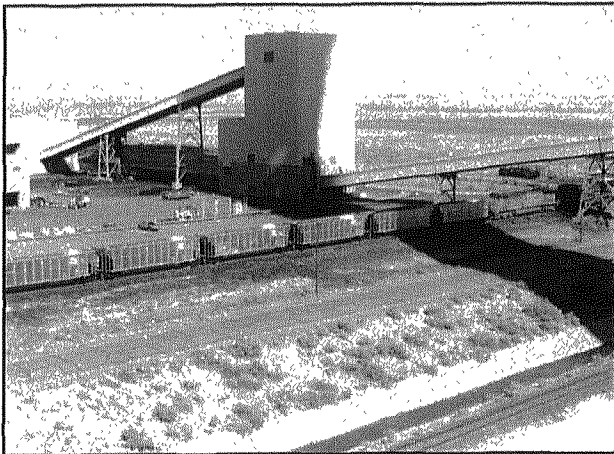
A total of 264 individuals participated in one or more of the following offered screenings: PSA, glucose/diabetes, blood pressure, and cholesterol.

**Utah Safety Council Award** — Mike Mooney accepted an award from the president of the USC on behalf of IPSC. The Awards Committee of the USC selected IPSC to receive the Award of Merit for its achievements in workplace safety performance. To be considered for this award, the organization's incident rate must be lower than the national average for the industry, continuous safety performance improvement must be demonstrated, and essential elements of a safety and health program must be in place.



Mike Mooney accepted the Award of Merit from the USC President.

**"E" Train** — On September 9, a new unit train rolled into the yard at IR. The 100 cars were manufactured by Trinity Rail at their Sabinas, Mexico facility and incorporated a new patented configuration called Rapid Discharge Longitudinal (RDL). Instead of having several doors that opened toward the front or back of the car to discharge coal, the RDL car had only two doors that opened to the side. IPSC Operations was impressed with the RDL car capabilities of speedy coal discharge and better winter operation. The new train carried 2000 series numbering and was commonly known as the "E" Train.



An overhead view of the new "E" train.



A close-up view of the new "E" train.

**Healthy Worksite Award** — The IPSC Staywell Program received the Platinum Level "Healthy Worksite Award" from the UDOH for Worksite Health Promotion. This year marked 15 consecutive years for IPSC receiving an award from the Governor's Council. The purpose of the program was to assist companies in progressing each year to the highest level and implementing quality programs. IPSC started with the entry level award in 1995 and by following recommended guidelines and advancing, the Staywell Program has received the highest award level offered for the past 12 years. For the past four years, this has been called the Platinum Award.



Roger W. Stowell and Brian Coles accepted the Platinum Level Award on behalf of IPSC.

The Healthy Worksite Awards Program recognizes the outstanding achievements of businesses in implementing worksite health promotion programs, including on-site policies and work environments that support healthy lifestyles. UCWHP, formerly the Governor's Council on Health and Fitness, administers the award.

**Coal Pile Inventory** — The coal pile at IPSC has always had a history of fluctuation. From the end of October 2008 to the end of September 2009, the coal pile almost doubled in size from 1,263,744 tons to 2,471,855 tons. The previous high mark was 1,831,458 tons set at the end of November 1991. This tonnage mark was passed in June and the peak total was reached at the end of September.



The coal pile increased to almost double in size.

**Replacement of Circulating Water Acid Tanks** — After a leak developed in March 2008 and inspections to determine the damage had been completed, it was decided to replace both acid tanks. The bid to fabricate and deliver the two acid tanks was awarded to Structural Steel and Plate Fabrication, located in North Salt Lake City. The bid was awarded in November 2008 and fabrication began in January 2009. On February 19, a site inspection was performed by Don Smith, Craig Stumph, and Brent Smith of IPSC. Hydrostatic testing for the Unit 1 tank was witnessed and a visual inspection of both tanks was performed.

Beginning the week of March 13, AP&F Construction began the preparation work for the removal of the Unit 1 tank. The existing Unit 1 tank was removed and staged in the salvage yard and the two new tanks were delivered. The new Unit 1 tank was placed and all associated piping, railing, grating, and lighting was reattached. A new level transmitter was placed on the new tank and the first truckload of acid was pumped into the new tank the week of April 17. The tank and all piping was leak checked after a second truckload of acid and the tank was put in service. Once in service, the second tank was cleaned.

The preparation work for removal of the second tank began the week of May 26. Once this work was completed, the tank was removed and the new tank was set in place. All associated piping, railing, grating, and lighting was reattached the following week and the tank was leak checked and put into service. New insulation and lagging was installed on both tanks in October and November.

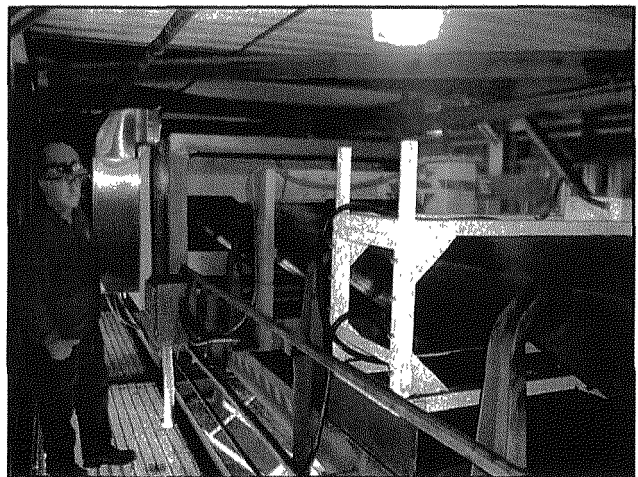


AP&F removed the old acid tank.



The new acid tank being installed.

**On-line Coal Analyzer** — An on-line coal analyzer was installed on Conveyor 8 in the Coal Yard. This analyzer provided instantaneous information to the Coal Yard Control Room on coal properties such as ash, moisture, BTUs, sulfur, and elemental properties of the coal. By knowing a particular real-time, instantaneous coal property such as sulfur or BTU content, blending of the coal from the various stockpiles could be done more precisely. Through more accurate blending of the coal supplied to the units, operators could maximize coal resources.

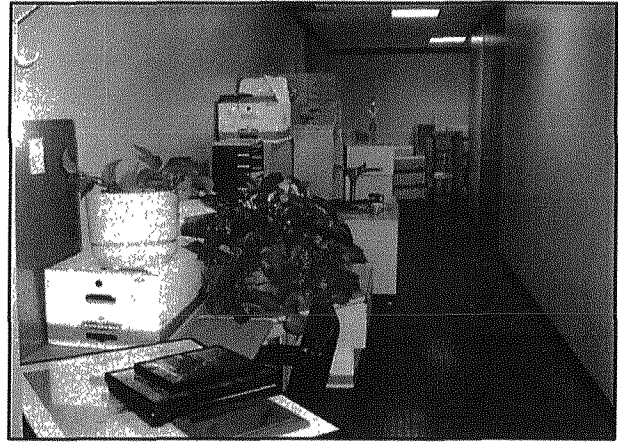


The on-line coal analyzer installed on Conveyor 8.

**Offices Get a New Look** — After over twenty-five years of wear and tear, the carpet in the Admin and in the Maintenance Planning offices was replaced. The work was completed during the evening hours and on weekends to minimize the interruption of work as much as possible. Some of the walls were also repainted while the offices were empty.



The Safety/Training office was cleaned out in preparation for a new paint job and carpet.

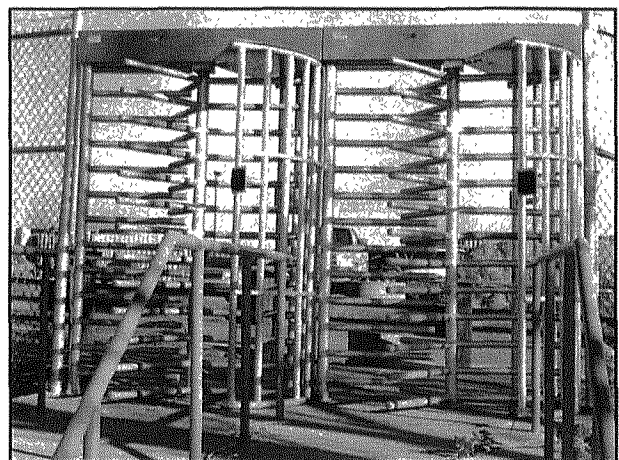


Items were removed from offices and stacked in hallways prior to the new carpet being installed.

**New Cyber Security System** — The federal government mandated that utilities comply with North American Electric Reliability Corporation (NERC) Cyber Security Standards. As part of this mandate, IPSC installed a new fence on the west perimeter of the property and a new computer-based security system for the site, key control rooms, and the areas containing critical cyber assets.

The computer-based security system construction was completed in December. The NERC requirements mandated that all entrances to a security perimeter be monitored, that all entrants be logged, and that sufficient alarming existed to indicate when someone attempted to enter an area where they were not authorized.

With the new system, all IPSC employees, contractors, and visitors to the site were issued a unique Radio Frequency Identification (RFID) card. As a person entered or exited a security perimeter, a card reader controlled door or gate locks, which allowed or denied entrance. The card

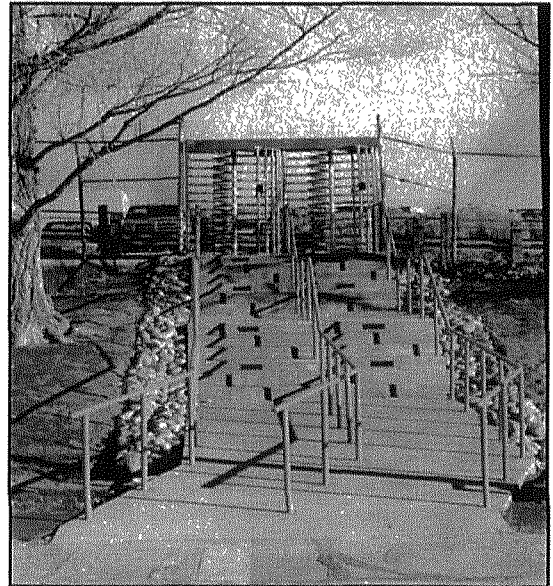


New security card-reader turnstiles allowed employees access to the plant site from the upper-parking lot.



reader also logged activity and maintained a NERC required history of entrances and exits. To facilitate employee site access, a new ramp with turnstiles was installed from the upper parking lot to the sidewalk on the southeast corner of the Admin Building.

**Christmas Party** — The 2009 Christmas party was held in the ballroom of the student center of Utah Valley University in Orem. There was an abundance of delicious food served in a festive setting. The music was performed by the Joe Friday Band. Santa made his appearance with a merry band of elves to dispense the door prizes. A good time was had by all.



New security card-reader turnstiles and stairs.



Van and Margie Beckstrom enjoyed dancing.



Some of the lucky door prize winners.



Santa and his merry elves handed out door prizes to employees at the annual IPSC/EAO Christmas party.

**Number of Employees** — By the end of the year, the number of employees was 484.

## Staff 2009



Jon P. Christensen, Superintendent of Technical Services; Wes J. Bloomfield, Superintendent of Maintenance; George W. Cross, President and Chief Operations Officer; Jon A. Finlinson, Superintendent of Operations, Roger W. Stowell, Manager of Support Services.

**Personnel Changes** — The following personnel changes occurred during 2009:

### PROMOTIONS

<u>Employee</u>	<u>From</u>	<u>To</u>
Abbott, Justin	Maintenance Assistant	Maintenance Mechanic II
Anderson, Dean	Auxiliary Operator C	Auxiliary Operator B
Ashman, Robert	Laborer	Insulator/Sheet Metal Worker
Brinkerhoff, Nick	Insulator/Sheet Metal Worker	Maintenance Assistant - I & C
Christensen, Ken	Converter Operator	Operating Supervisor - Converter
Christensen, Morgan	Maintenance Assistant	Maintenance Mechanic II
Crafts, Ryan	Maintenance Assistant	Maintenance Mechanic II
Diaz, Felipe	Laborer	Maintenance Assistant - I & C
Dutson, Russell	Fuel Equipment Operator II	Fuel Equipment Operator I



## PROMOTIONS - continued

<u>Employee</u>	<u>From</u>	<u>To</u>
George, Brandon	Maint. Assistant - Electrical	Electrician
Harris, Shawn	Maintenance Mechanic II	Maint. Mechanic/Certified Welder
Henderson, Rick	Elec. Mechanic I - Converter	Utility Technician - Converter
Hintze, Stephen	Laborer	Maint. Assistant - Converter
Jones, Jason	Auxiliary Operator C	Auxiliary Operator B
Jones, Jason	Auxiliary Operator B	Maint. Assistant - Converter
Lake, Richard	Maintenance Mechanic II	Maintenance Mechanic I
Lewis, Dean	Electrical Technician HVAC	Relay Technician
Lovell, Lorne	Electrician	Electrical Technician
Mangelson, Aaron	Maintenance Mechanic II	Maint. Mechanic/Certified Welder
Monroe, Robert	Maint. Assistant - I & C	Controls Mechanic
Mooney, Josh	Auxiliary Operator C	Auxiliary Operator B
Nichols, Matthew	Maintenance Assistant - IR	Maint. Assistant - Electrical
Nielson, Brandon	Laborer	Maint. Assistant - Electrical
Niles, Michael	Maintenance Mechanic II	Maint. Mechanic/Certified Welder
Priest, Joe	Maintenance Assistant	Maintenance Mechanic II
Schena, Boyd	Maintenance Mechanic II	Maint. Mechanic/Certified Welder
Smith, Brandon	Maintenance Assistant	Maintenance Mechanic II
Smith, Donald	Associate Engineer	Engineer
Springer, Kelly	Utility Tech Converter	Converter Operator
Steele, Jeff	Utility Tech Converter	Electrical Mechanic I - Converter
Steele, Mike	Associate Engineer	Engineer
Stephenson, Gary	Lube PM Service Worker	Insulator/Sheet Metal Worker
Stumph, Dallas	Laborer	Maintenance Assistant - HVAC
Styler, Michelle	Clerk Receptionist	Clerk Clerical Pool
Sumsion, Jed	Maint. Assistant - HVAC	Elevator A/C Mechanic
Tanner, Lee	Planner/Scheduler	Elect. Mech. Supv. - Converter
Wankier, Bart	Maintenance Assistant	Maintenance Mechanic II
Webb, Brandon	Laborer	Maint. Assistant - Electrical
Wood, Alan	Maint. Assistant - Electrical	Electrician
Wright, Russell	Electrician	Electrical Technician
Young, Richard	Maint. Assistant - HVAC	Elevator A/C Mechanic

### NEW HIRES

<u>Employee</u>	<u>Job Title</u>
Beckstrom, Luke	Laborer
Bliss, Tyson	Laborer
Bryan, Shaun	Laborer
Finlinson, Julian	Laborer
Mickelsen, Jessica	Clerk Receptionist
Moody, Brian	Laborer
Nielson, Jacob	Laborer
Pace, Dillon	Laborer
Rogers, Jared	Laborer
Stewart, Nathan	Laborer
Terril, Michael	Laborer

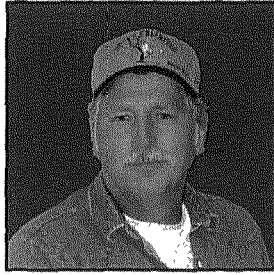
### TERMINATIONS

<u>Employee</u>	<u>Job Title</u>
Hughes, Rendon	Laborer
Lyman, Marshall	Maintenance Mechanic I

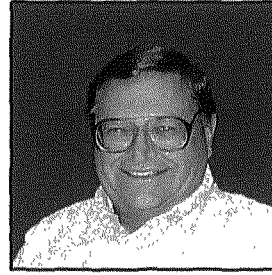
## RETIREES



Jolynn R. Blodgett  
Clerk Clerical Pool



Leland L. Davis  
Maintenance Mechanic I



Ronald DeGraw  
Operating Supervisor -  
Converter Station



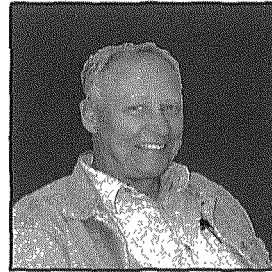
Gary S. McCausland  
Electrical Technician



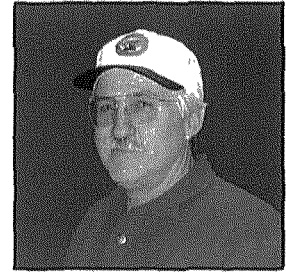
John H. Rowlette, Jr.  
I & C Technician



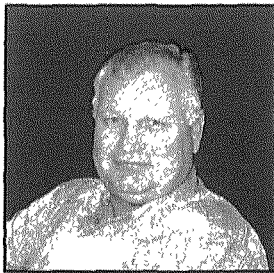
Gary W. Ryther  
Electrical Technician



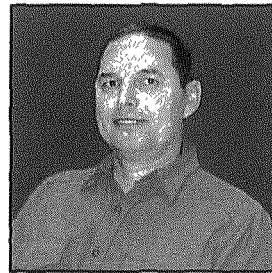
Brent L. Sorensen  
I & C Technician



Wayne B. Spencer  
Maintenance Mechanic I



Gary Ross Sperry  
Electrical Technician



Ronald L. Sumsion  
Relay Technician

## IPA

**Financing** — On June 30, the current weighted average borrowing cost was 4.93 percent.

## **EXHIBIT #1**

### **PRODUCTION INFORMATION**

1.	IGF Production and Availability History Table . . . . .	E1-1
2.	IGF Generation & Coal Usage Trends . . . . .	E1-2
3.	IGS Availability & Equiv Availability Trends . . . . .	E1-3
4.	IGF Capacity & Output Factor Trends . . . . .	E1-4
5.	IGF Forced Outage Rate Trend . . . . .	E1-5
6.	IGF Heat Rate & Coal Quality Trends . . . . .	E1-6
7.	WECC Utility Comparison Data . . . . .	E1-7
8.	Station Capacity Comparison . . . . .	E1-8
9.	Net Generation Comparison . . . . .	E1-9
10.	Net Capacity Factor Comparison . . . . .	E1-10
11.	Station Heat Rate Comparison . . . . .	E1-11
12.	Coal Burn Comparison . . . . .	E1-12
13.	SO2 Emissions Rate Comparison . . . . .	E1-13
14.	NOx Emissions Rate Comparison . . . . .	E1-14

## IGF Production and Availability History

Fiscal Year End Comparisons (last 5 years)

PROD INFO (IGF)	FYTD	04-05	05-06	06-07	07-08	08-09	notes- last FYE	last 5 yr ave
Gross Generation	GWhr	14,879	14,947	15,560	15,182	14,728	6th Best	15,142
Net Generation	GWhr	14,014	14,092	14,686	14,312	13,867	6th Best	14,276
Coal Usage	ktons	5,905	5,816	5,960	5,861	6,110	Highest	5,886
Coal Quality	btu/#	11,322	11,590	11,689	11,562	10,973	Lowest	11,541
Net Facility Heat Rate	B/KWh	9,545	9,573	9,491	9,474	9,675	high	9,521
Availability	%	92.2	93.4	95.5	92.9	92.4	average	93.5
Equiv Avail Factor	%	91.7	92.6	95.2	92.8	92.1	average	93.1
Net Output Factor	%	96.4	96.1	97.5	97.4	95.2	low	96.9
Net Capacity Factor	%	88.9	89.5	93.1	90.5	87.6	low	90.5
Forced Outage Rate	%	1.16	1.88	0.45	2.72	2.69	high	1.55
Equiv Forced Outage Rate	%	1.48	2.40	0.51	2.80	2.81	highest (worst)	1.80
Equil Unplanned Outage Rate	%	3.29	3.50	0.59	2.94	3.13	high	2.58
Unit Shutdowns	#	18	20	15	16	13	below average	17

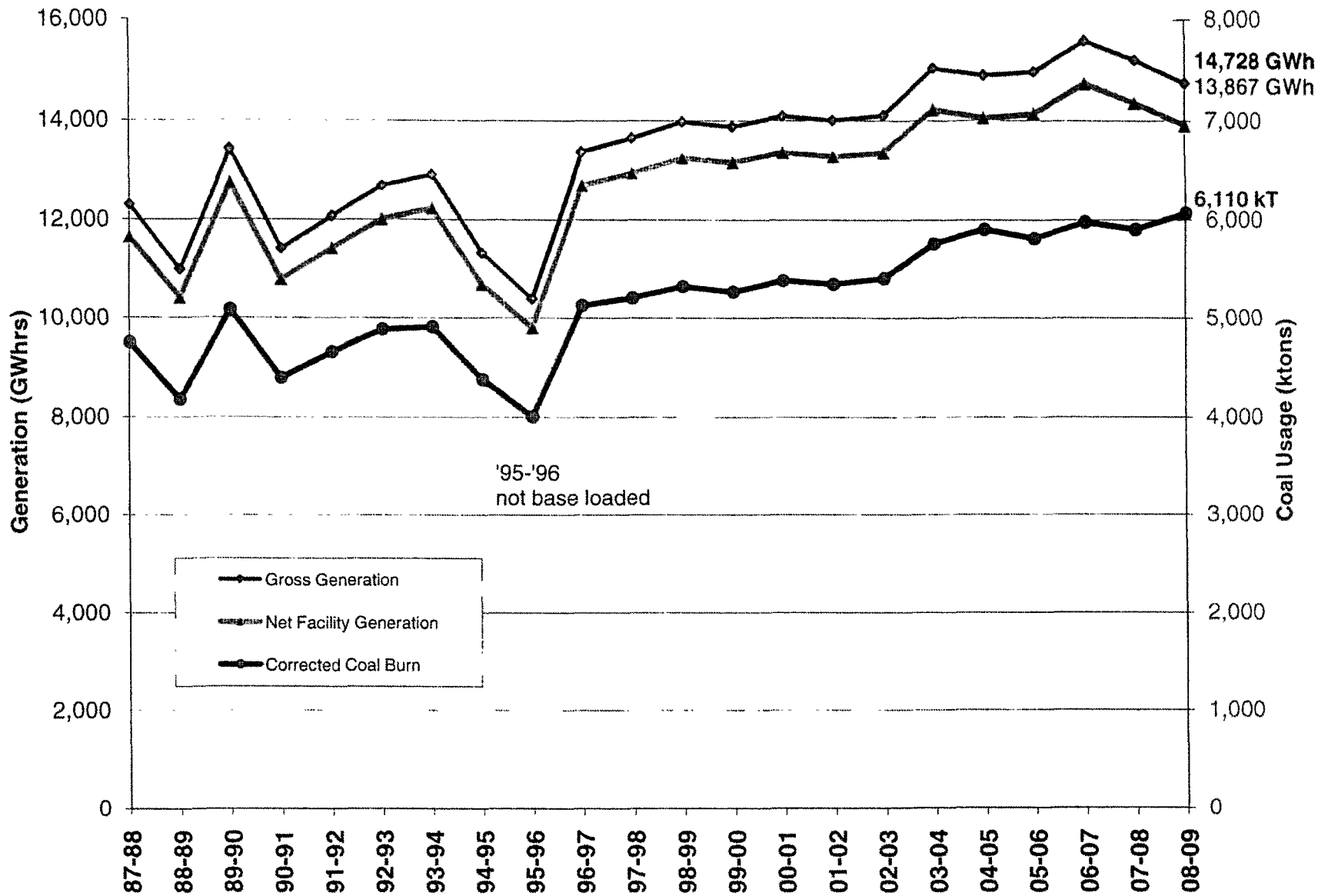
NOTES: Fiscal Year End (FYE) is 7/1 through 6/30

Comparison is with previous years numbers through the same period.

E1-1

IP12\_007715

# IGF Generation & Coal Usage Trends



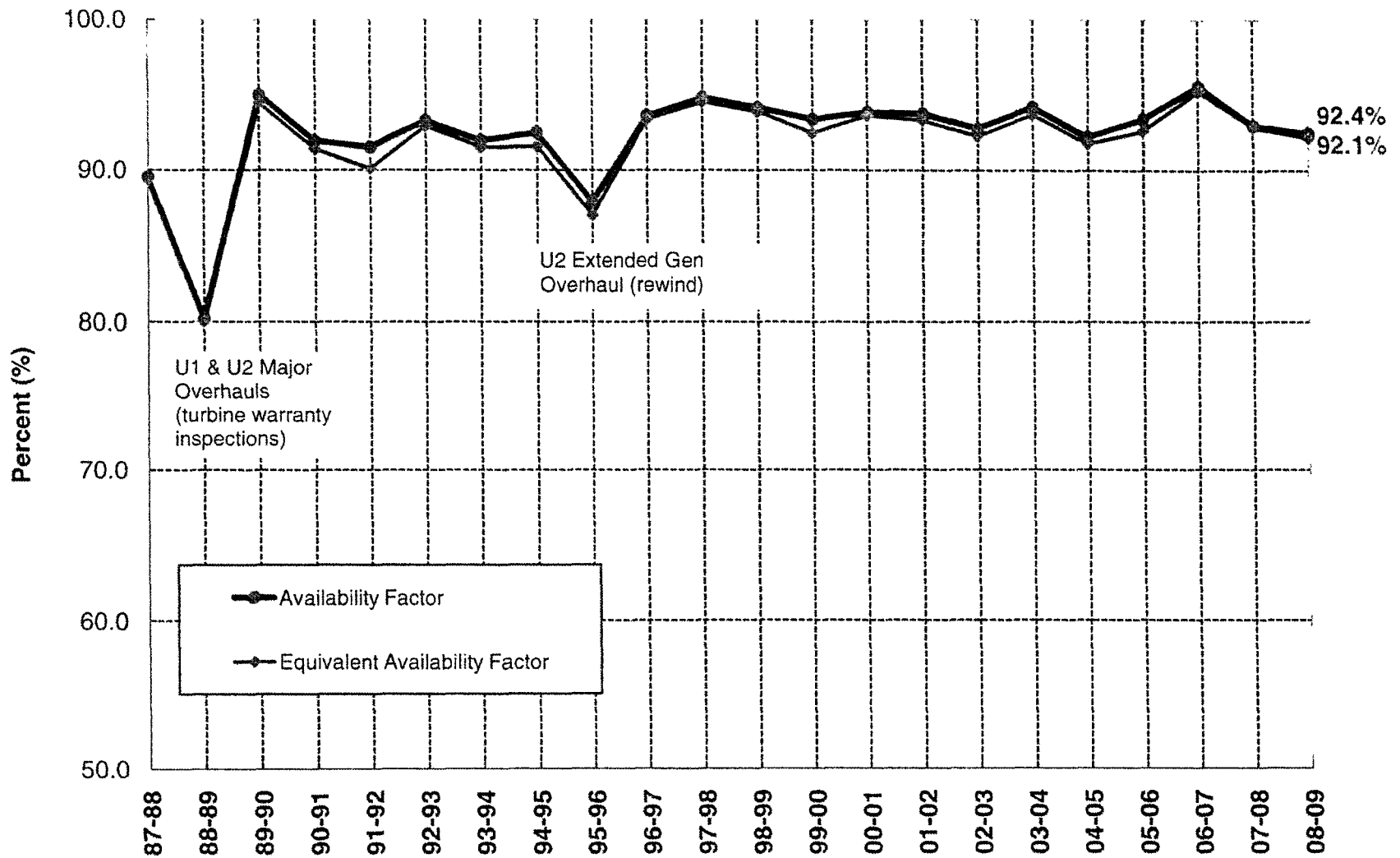
Historic comparison of July thru June (Fiscal Year End), since commercial operation

E1-2

IP12\_007716



# IGF Availability & Equiv Availability Trends

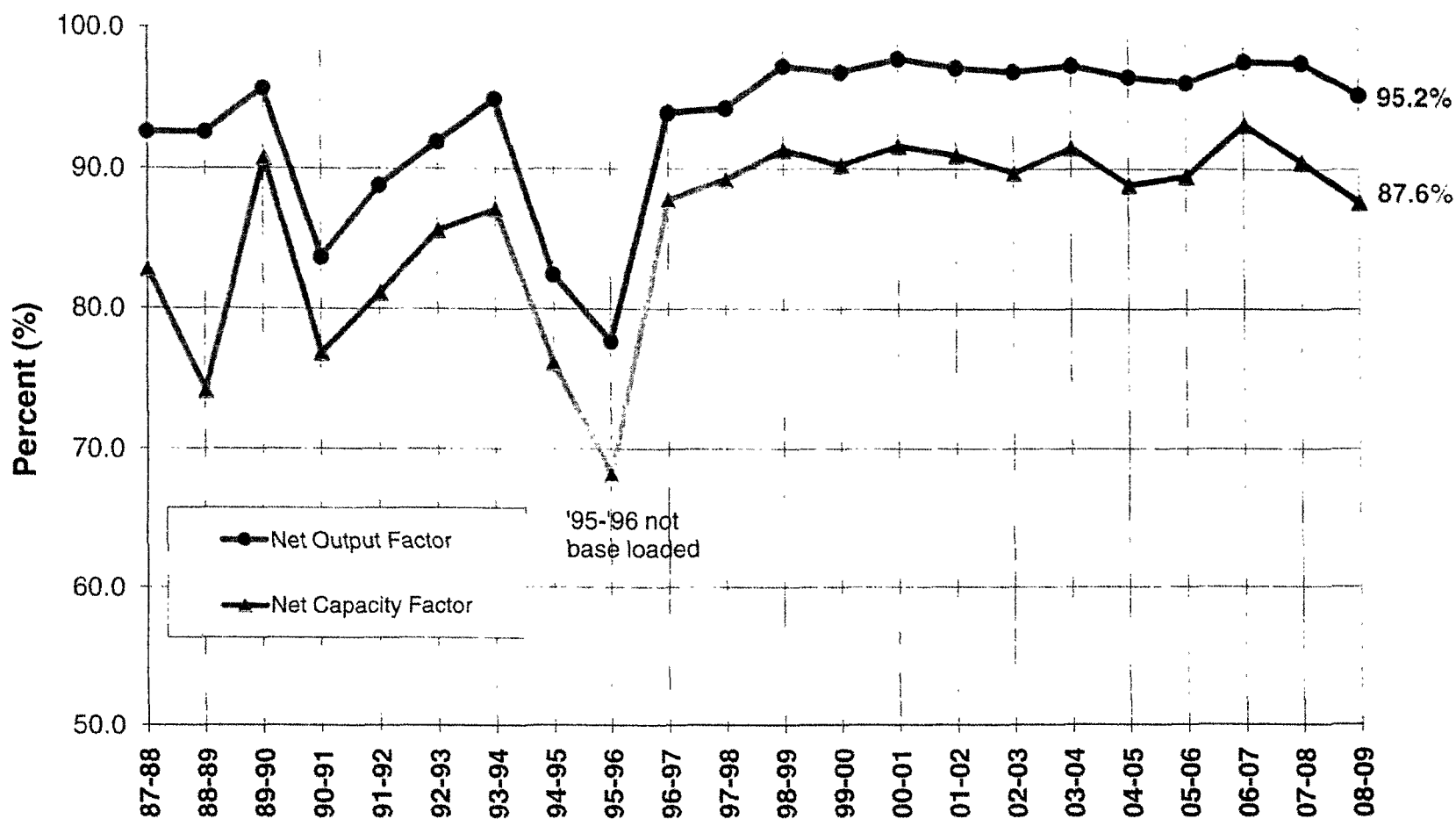


Historic comparison of July thru June (Fiscal Year End), since commercial operation

E1-3

IP12\_007717

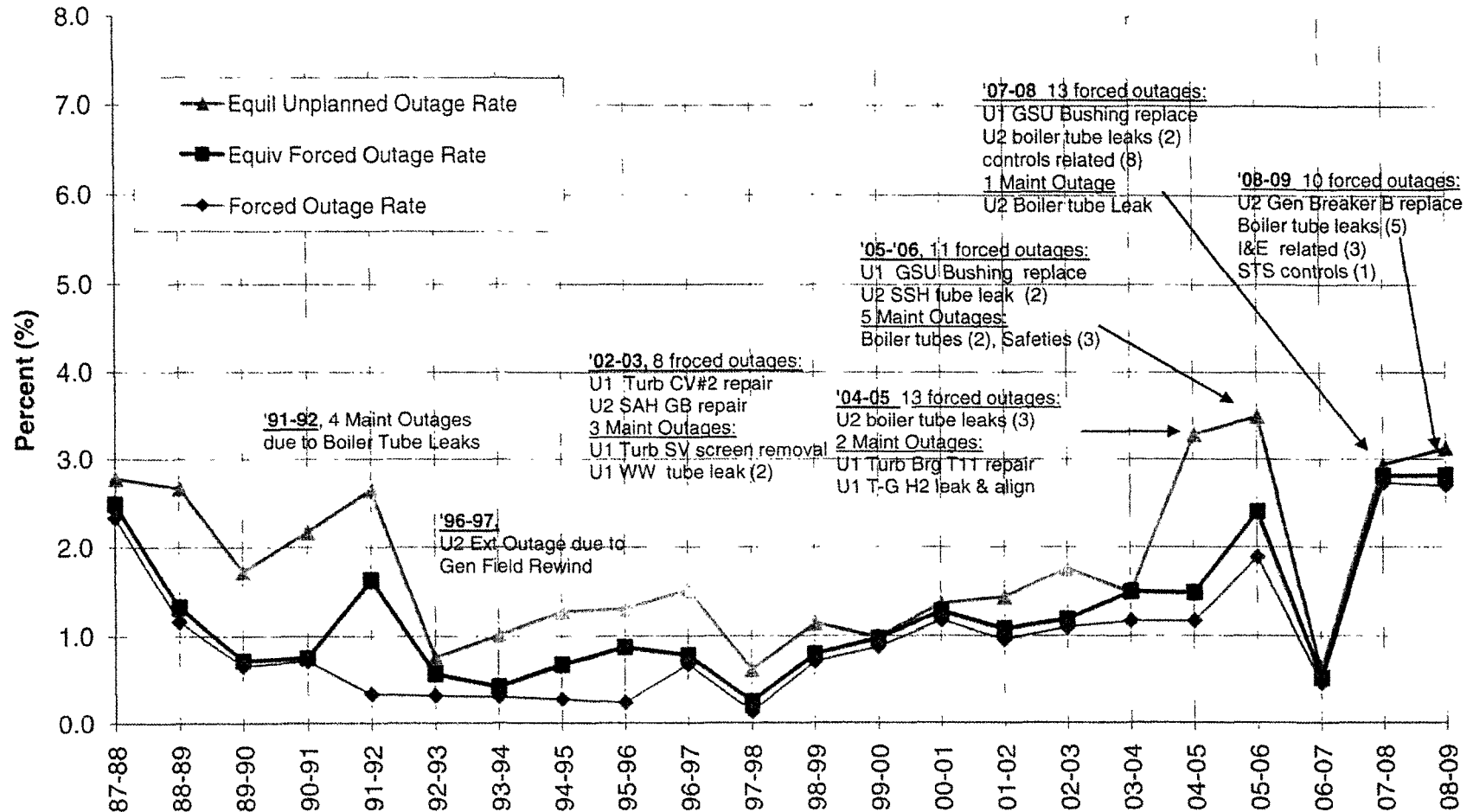
## IGF Capacity & Output Factor Trends



Historic comparison of July thru June (Fiscal Year End), since commercial operation

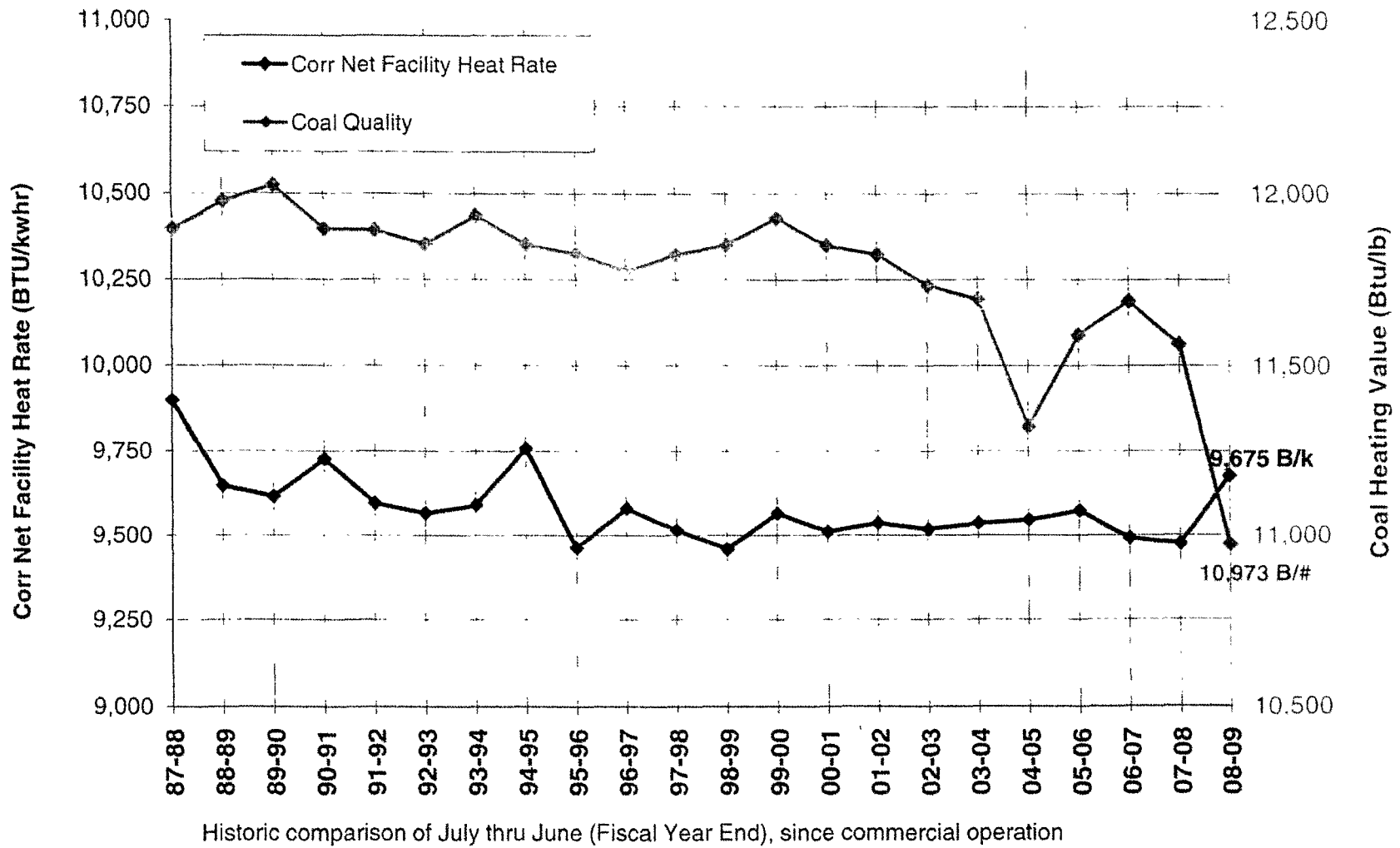
NOTE: The difference between Net Capacity and Net Output Factors is the downtime associated with outages (e.g.: Availability Factor). NOF is the average load level while the Units are in-service. NCF is the average load for the entire year, including time during

# IGF Forced Outage Rate Trend



NOTES: Equivalent Unplanned Outage Rate includes forced outages, maintenance outages, plus all derates, but excludes annual pre-planned unit overhauls. Equivalent Forced Outage Rate is the total time charged to forced outages and unit derates. Forced Outage Rate is the time charged just to forced outages (unit trips).

# IGF Heat Rate & Coal Quality Trends



E1-6

IP12\_007720

# UTILITY COMPARISONS- 2008 (calendar year end)

## WECC Comparison Data (Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW)

Reference; Data from US EPA- Clean Air Markets database and US DOE EIA-906/920 "Power Plant Report" database,

rev 09-11 17, AEN

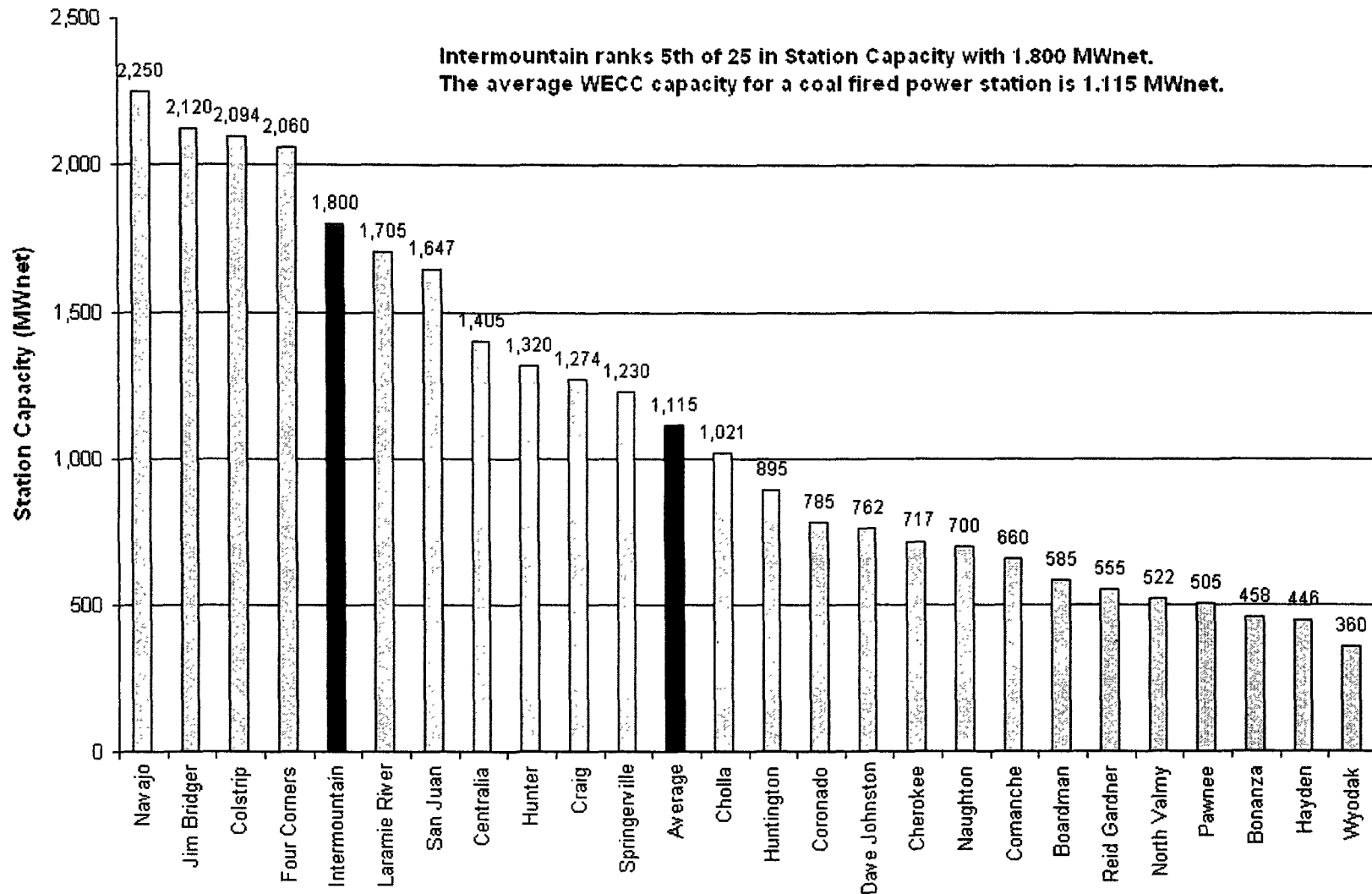
Listed by Station Capacity				Station Capacity	Net Generation	Coal Burn	Coal Quality	NSHR	Net Capacity Factor	Net Output Factor	Availability	NOx Emissions Rate	SO2 Emissions Rate	CO2 Emissions Rate	
Rank	PLANT	OPERATORS	Location	# units	MWnet	GWhrs	ktons	Btu/lb	Btu/Kwh	%	%	%	#/mm btu	#/mm btu	#/mm btu
1	Navajo	Salt River Project	Page, AZ	3	2,250	17,523	8,122	10,837	10,055	88.90	93.94	94.38	0.343	0.038	205.200
2	Colstrip	PPL Montana, LLC	Colstrip, MT	4	2,094	16,087	10,346	8,442	10,868	87.70	94.58	92.47	0.285	0.163	207.546
3	Jim Bridger	MidAmerican Energy	Pt of Rocks, WY	4	2,120	15,303	8,552	9,250	10,350	82.40	90.98	90.33	0.270	0.247	208.545
4	Four Corners	Pinnacle West	Fruitland, NM	5	2,060	14,684	8,280	8,928	10,070	80.39	91.05	88.06	0.592	0.142	205.199
5	Intermountain	LDWP for IPA	Delta, UT	2	1,800	14,450	6,098	11,187	9,445	91.64	96.98	94.24	0.381	0.080	205.200
6	Laramie River	Basin Electric Power COOP	Wheatland, WY	3	1,705	12,204	7,597	8,293	10,337	81.71	89.13	91.42	0.264	0.150	205.200
7	San Juan	Public Serv of NM	Watertown, NM	4	1,647	10,672	6,086	9,520	10,905	73.97	88.88	82.99	0.381	0.184	205.592
8	Hunter	MidAmerican Energy	Castledale, UT	3	1,320	10,247	4,736	11,587	10,719	88.62	91.50	96.58	0.367	0.110	205.229
9	Craig	Tri-State G&T	Craig, CO	3	1,274	10,001	5,043	9,958	10,049	89.61	93.20	95.89	0.309	0.073	208.558
10	Centralia	TransAlta Energy Corp	Centralia, WA	2	1,405	9,049	5,763	7,951	10,453	73.52	94.15	77.88	0.215	0.044	203.027
11	Springerville	Tucson Elec Power	Springerville, AZ	3	1,230	8,872	4,963	9,105	10,209	82.34	88.29	93.00	0.151	0.151	207.446
12	Cholla	Pinnacle West	Jospeh City, AZ	4	1,021	7,404	4,020	9,620	10,452	82.78	90.40	91.32	0.261	0.397	205.845
13	Huntington	MidAmerican Energy	Huntington, UT	2	895	7,149	3,023	11,855	10,034	91.19	95.25	95.47	0.290	0.095	205.209
14	Coronado	Salt River Project	Phoenix, AZ	2	785	6,286	3,709	8,867	10,482	91.42	94.00	96.99	0.423	0.453	208.632
15	Dave Johnston	MidAmerican Energy	Glenrock, WY	4	762	5,639	4,002	7,971	11,326	84.47	91.09	92.48	0.406	0.576	208.526
16	Naughton	MidAmerican Energy	Kemmerer, WY	3	700	5,114	2,770	9,862	10,723	83.39	86.35	96.31	0.495	0.767	207.166
17	Cherokee	Xcel Energy	Denver, CO	4	717	4,535	2,089	11,467	10,739	72.20	83.98	85.74	0.457	0.247	204.873
18	Comanche	Xcel Energy	Fuquene, CO	2	660	4,378	2,651	8,541	10,394	75.72	89.39	84.48	0.228	0.437	208.237
19	Borlindan	Portland General Electric	Borlindan, OR	1	585	4,048	2,382	8,337	9,821	78.99	95.12	82.82	0.425	0.557	208.423
20	Bonanza	Deseret G&T COOP	Vernal, UT	1	458	3,735	2,076	9,430	10,495	93.09	94.94	97.79	0.338	0.048	205.200
21	Payson	Xcel Energy	Brush, CO	1	505	3,527	2,234	8,368	10,630	79.72	84.93	93.61	0.245	0.719	208.713
22	North Valley	Sierra Pacific Power	Valley, NV	2	522	3,541	1,769	10,573	10,595	77.44	87.88	87.87	0.377	0.472	208.445
23	Reid Gardner	Sierra Pacific Resources	Mojave, NV	4	555	3,357	1,624	11,726	11,345	65.50	81.09	80.55	0.316	0.050	205.819
24	Hayden	Xcel Energy	Hayden, CO	2	446	3,422	1,626	11,505	10,939	87.60	93.51	93.42	0.359	0.130	205.203
25	Wyodak	MidAmerican Energy	Campbell Co, WY	1	360	2,816	2,067	7,821	11,492	89.29	91.72	97.09	0.296	0.487	208.632
WECC Totals or Averages				Average	1,115	8,162	4,464	9,640	10,517	82.94	90.89	90.93	0.339	0.273	206.627
				Totals	69	27,876	204,042	111,608							

E1-7

IP12\_007721

# STATION CAPACITY COMPARISON

Data ranked by Station Capacity (MWnet), Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW



Reference: Data from Dept of Energy, EIA-906/920 "Power Plant Report", for calendar year 2008  
[http://www.eia.doe.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html)

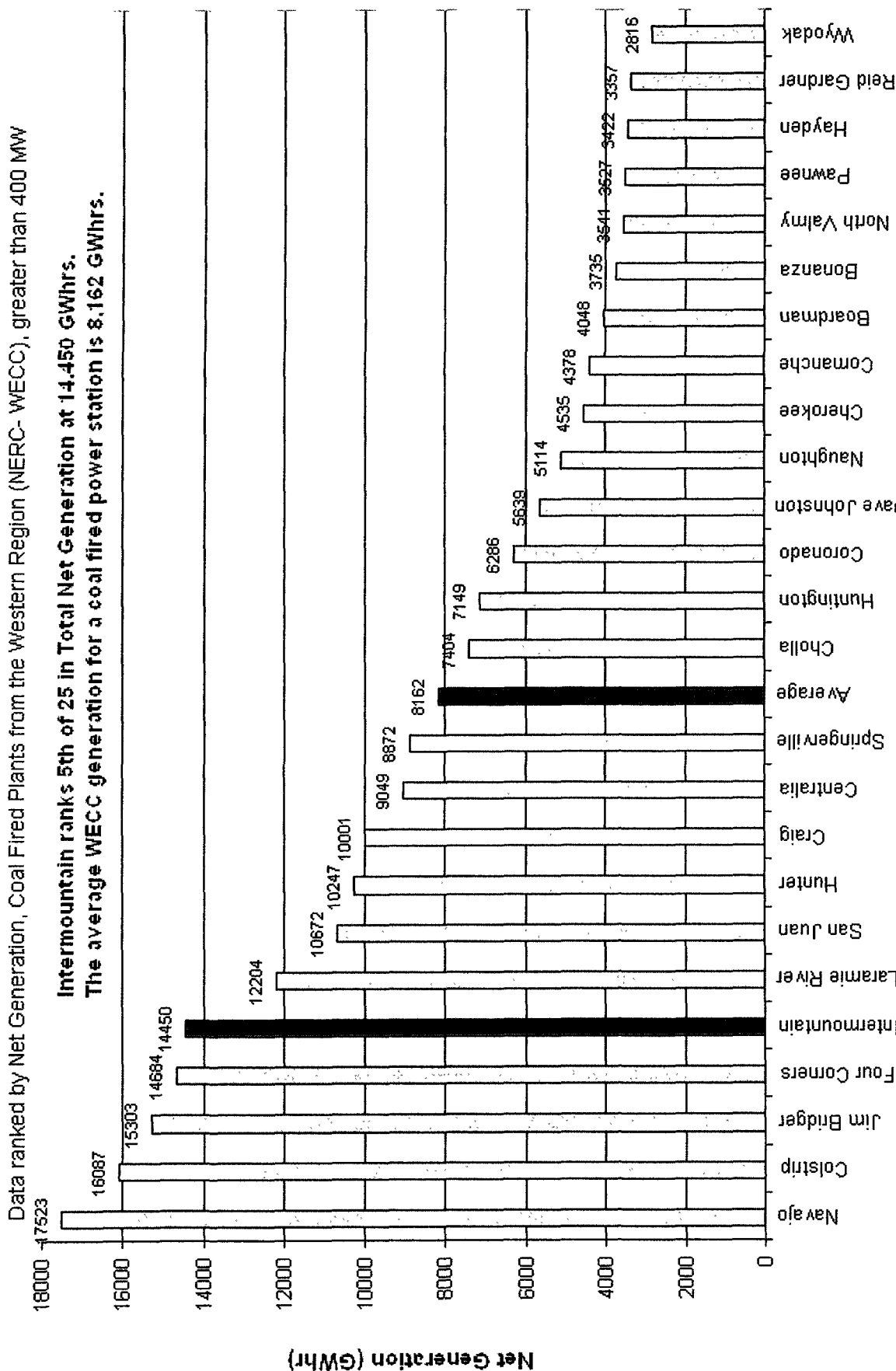


# NET GENERATION COMPARISON

Data ranked by Net Generation, Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW

Intermountain ranks 5th of 25 in Total Net Generation at 14,450 GWhrs.

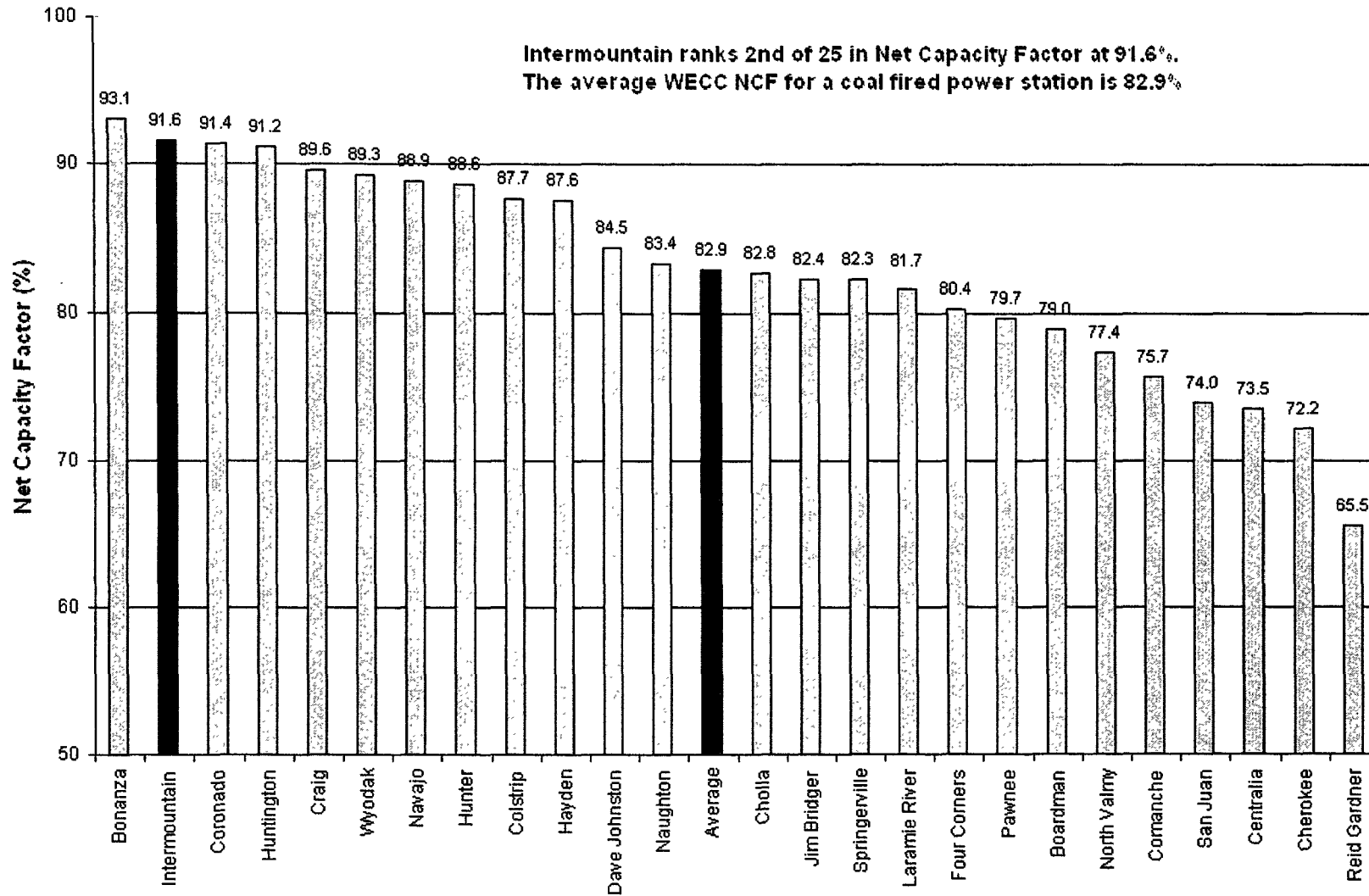
The average WECC generation for a coal fired power station is 8,162 GWhrs.



Reference: Data from Dept of Energy, EIA-906/920 "Power Plant Report", for calendar year 2008  
[http://www.eia.doe.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html)

# NET CAPACITY FACTOR COMPARISON

Data ranked by Net Capacity Factor, Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW

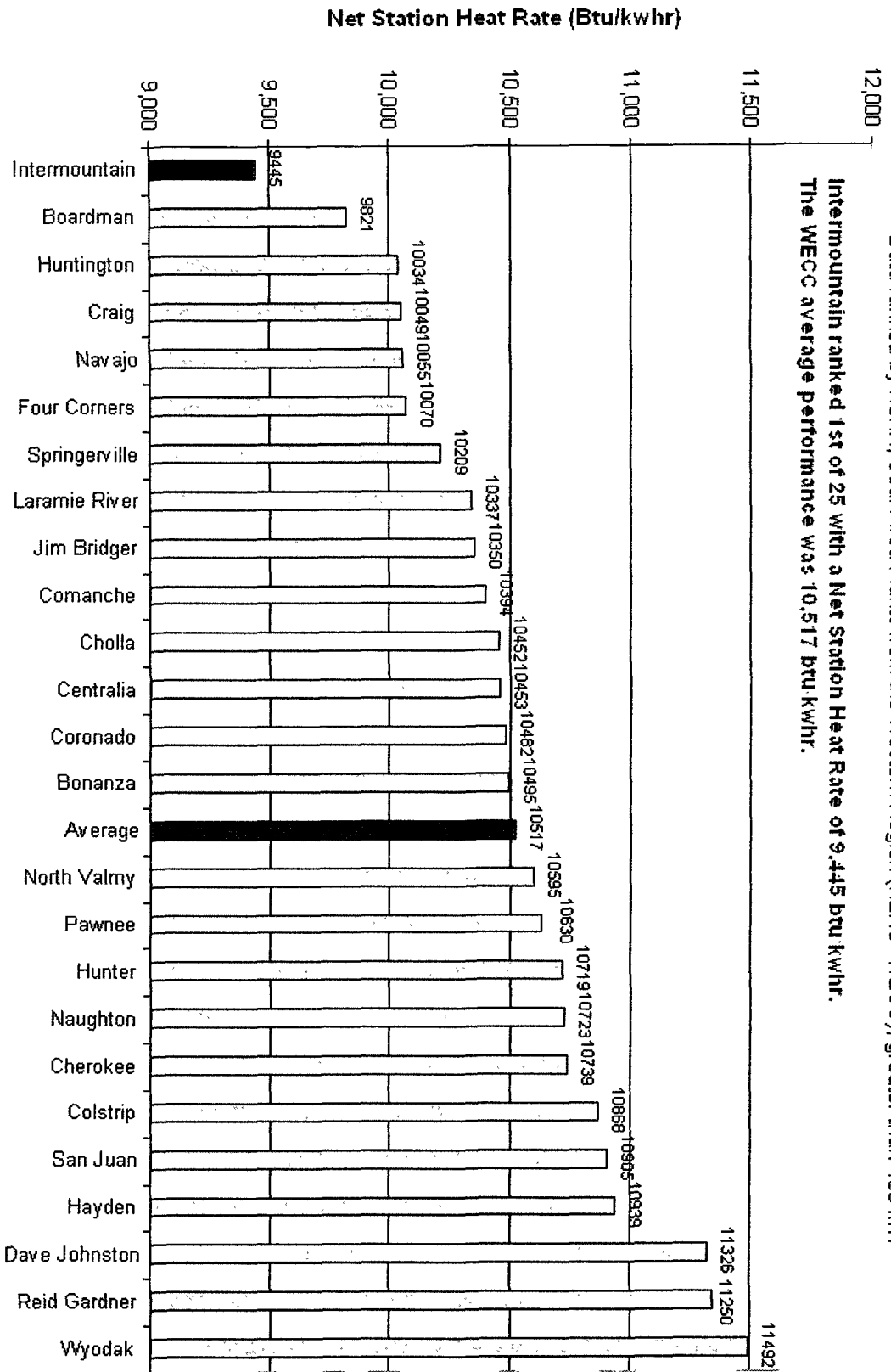


Reference: Data from Dept of Energy, EIA-906 "Power Plant Report", for calendar year 2008  
[http://www.eia.doe.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html)

# STATION HEAT RATE COMPARISON

Data ranked by NSHR, Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW

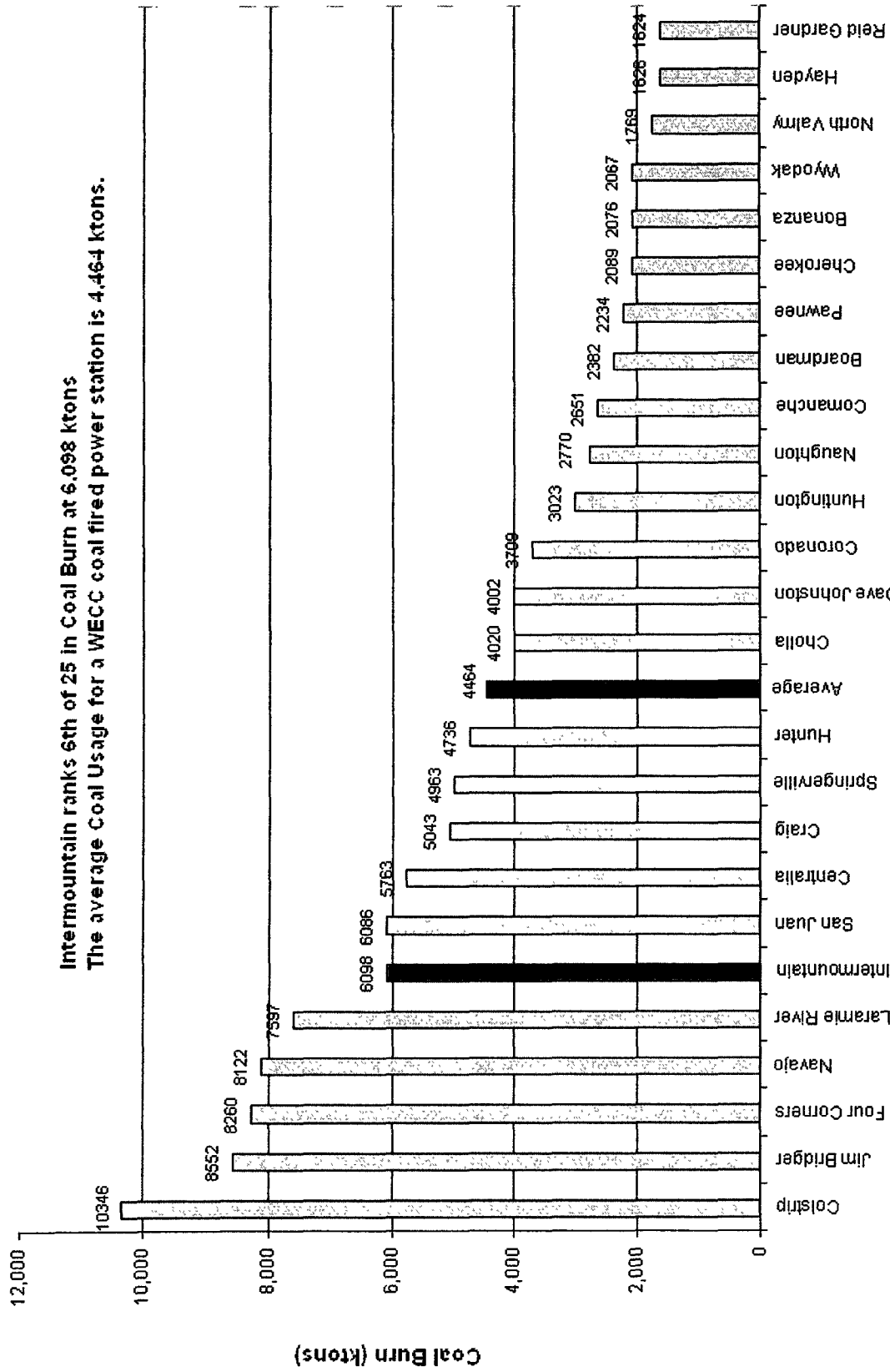
Intermountain ranked 1st of 25 with a Net Station Heat Rate of 9,445 btu/kwhr.  
The WECC average performance was 10,517 btu/kwhr.



Reference: Data from Dept of Energy, EIA-906/920 "Power Plant Report", for calendar year 2008  
[http://www.eia.doe.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html)

# COAL BURN COMPARISON

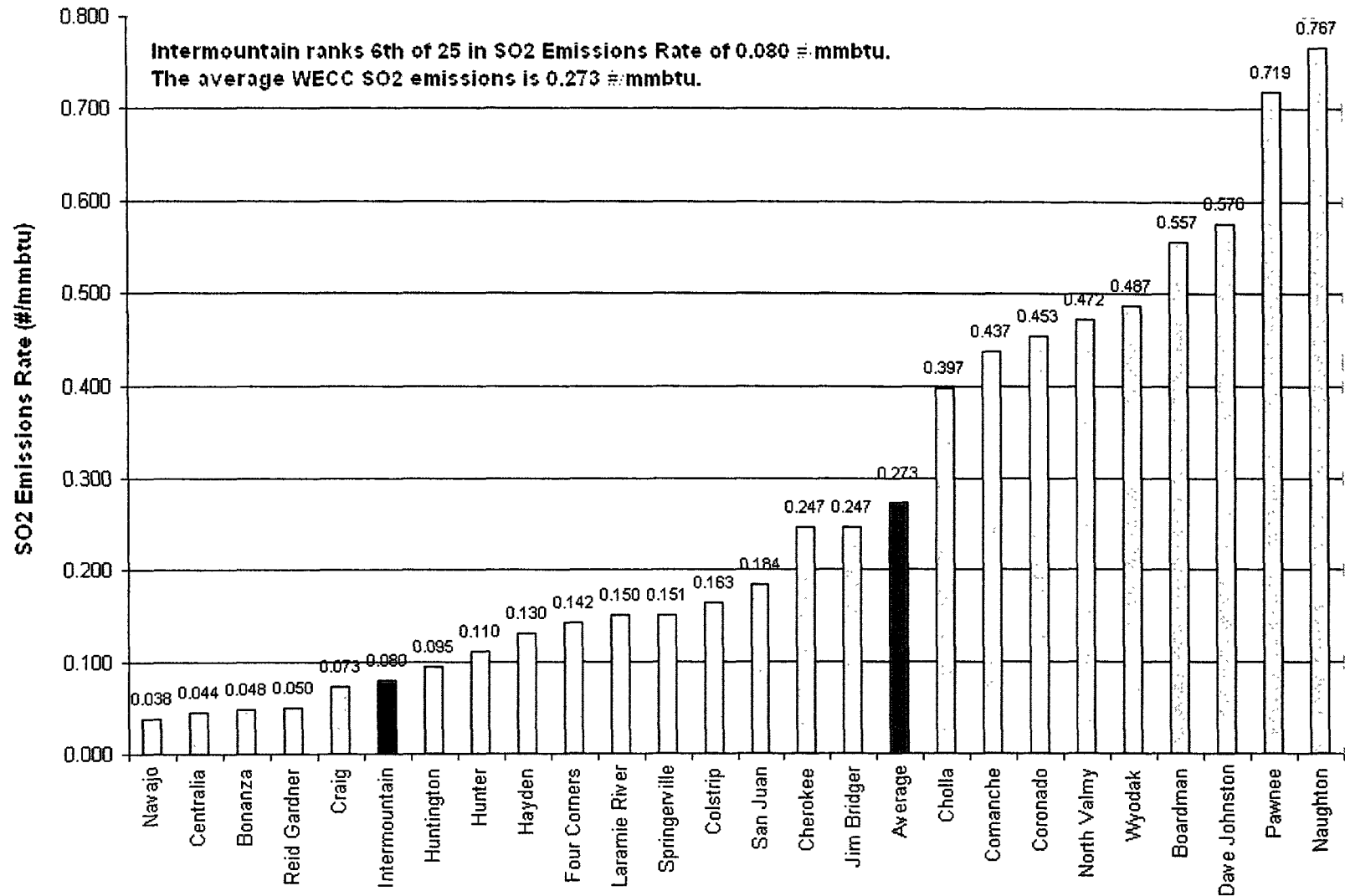
Data ranked by Coal Burn, Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW



Reference: Data from Dept of Energy, EIA-906/920 "Power Plant Report", for calendar year 2008  
[http://www.eia.doe.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html)

# SO2 EMISSIONS RATE COMPARISON

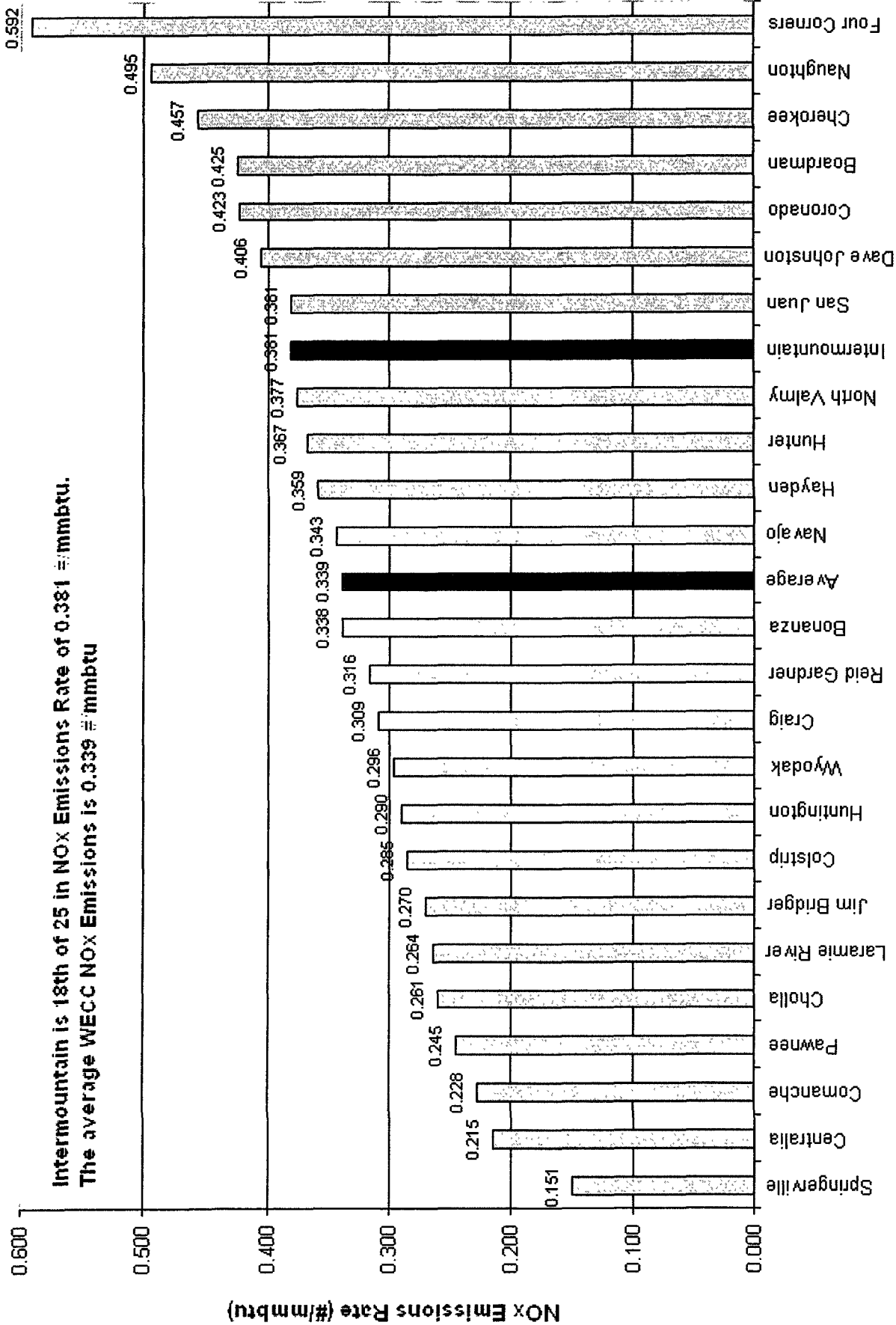
Data ranked by SO2 Emissions Rate, Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW



Reference: Data from US EPA- Clean Air Markets database for calendar year 2008,  
<http://cfpub.epa.gov/gdm/index.cfm>

# NOx EMISSIONS RATE COMPARISON

Data ranked by NOx Emissions Rate, Coal Fired Plants from the Western Region (NERC- WECC), greater than 400 MW



Reference: Data from US EPA- Clean Air Markets database for calendar year 2008,  
<http://cfpub.epa.gov/gdm/index.cfm>



**EXHIBIT #2**  
**INTERMOUNTAIN POWER SERVICE CORPORATION**  
**BOARD OF DIRECTORS**

<b>Name</b>	<b>Chairman</b>	<b>1<sup>st</sup> Vice-Chairman</b>	<b>2<sup>nd</sup> Vice-Chairman</b>	<b>Secretary</b>	<b>Board Member</b>
Benyamin, Aram H.		2009-		2007-2008	2007-
Blowey, Bruce E.		1994-1995	1986-1994	1994-1995	1986-1995
Bowler, R. Leon*					1982-
Buchanan, Arthur S.*		1982-1994		1982-1994	1982-1994
Burt, Raymond C.*	1982-1994				1982-1994
Coia, Michael A.					2008-
Cordova, Arnold R.	1995-1997				1995-1997
Cotton, Eldon A.	1997-1999				1989-1999
DeVore, Charles L.		1995-1999		1995-1999	1995-1999
Edwards, Marcie L.					2000-2001
Hutchings, W. Berry*					1982-1983 1988-1990
Keddington, Leon H.			1999-2000		1999-2000
Kezman, Nick				2008-	2008-
Lindsey, Hal		2006-2008			2006-2008
Martinez, Enrique	1999-2008				1998-2008
McMillen, Robert L.			1983-1986		1983-1986
Mecham, Walter M.			2007-		2007-
Merrell, J. Sterling					1984-1988
Michaelis, Clifford C.			2006-2007		1990-2007
Miller, C. Edward			2002-2005		2001-2005
Nichols, Norman E.*					1982-1989
Nielsen, Reece D.					1983-1984 1988-1988
Nosanov, Michael J.		1999-2002	1995-1999	1999-2002	1995-2002
Pruett, Vernon L.	1994-1995				1994-1995

**EXHIBIT #2**  
**INTERMOUNTAIN POWER SERVICE CORPORATION**  
**BOARD OF DIRECTORS**

<b>Name</b>	<b>Chairman</b>	<b>1<sup>st</sup> Vice-Chairman</b>	<b>2<sup>nd</sup> Vice-Chairman</b>	<b>Secretary</b>	<b>Board Member</b>
Raj, Ramon					2001-2001
Schumann, John W.		2002-2005	2000-2002		1999-2005
Shepherd, Robert F*			1982-1983		1982-1983
Solorzano, Edward F.			1995-1995		1995-1995
Tharp, Eric J.	2008-			2002-2007	2002-

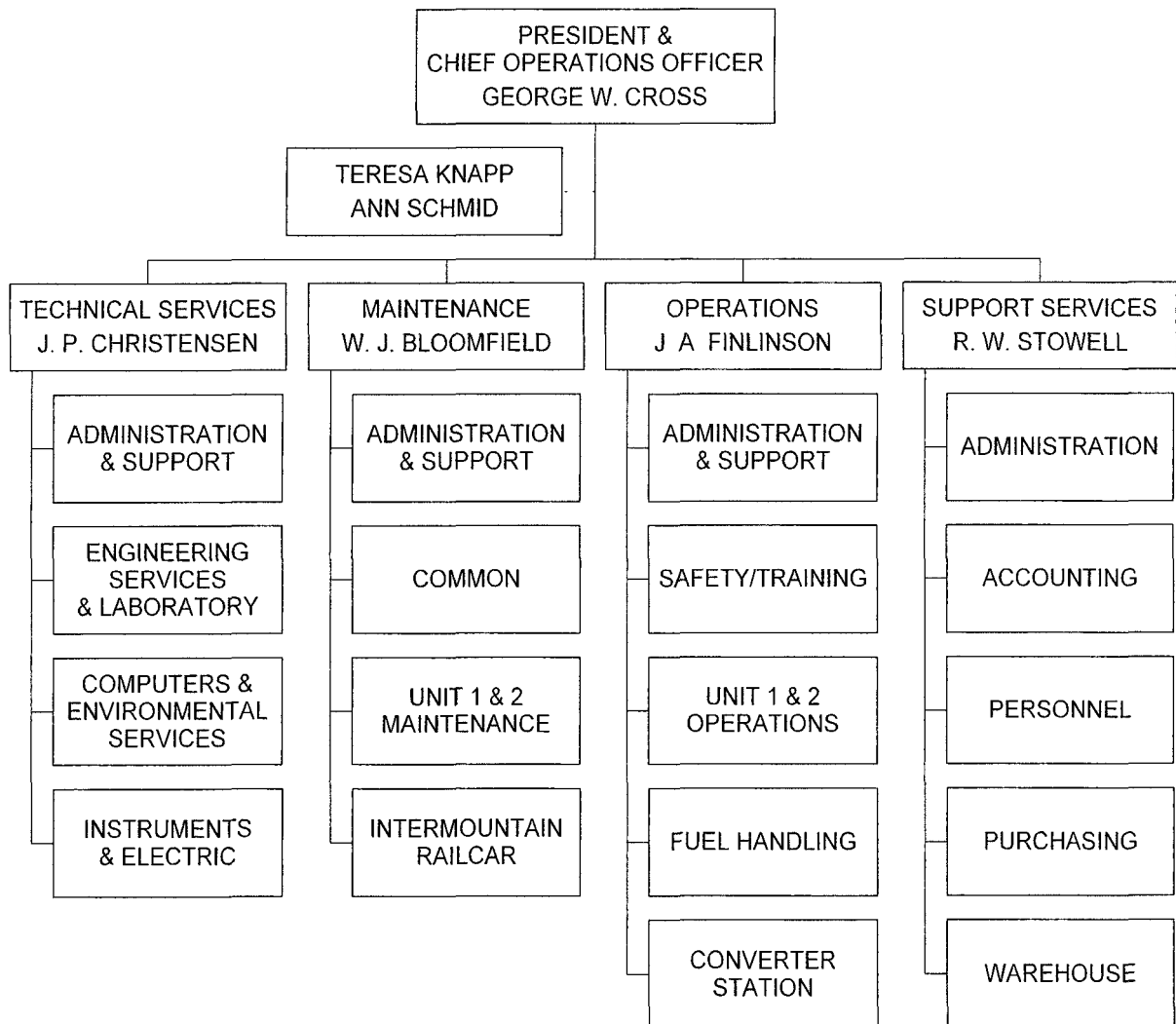
\* Indicates the original board members when the board was first created in 1982.

**EXHIBIT #3****INTERMOUNTAIN POWER SERVICE CORPORATION  
STAFF AND CORPORATE OFFICERS**

<b>Name</b>	<b>President &amp; Chief Operations Officer</b>	<b>Vice- President</b>	<b>Secretary/ Treasurer</b>	<b>Staff</b>
Alley, G. Mike				2005-2008
Bloomfield, Wes J.		2007-2008		2007-
Chapman, S. Gale	1982-2002			1982-2002
Christensen, Jon P.		2008-		2008-
Clay, Neil H.			1985-2004	1985-2004
Cross, George W.	2002-	1997-2002		1997-
Davis, Robert A.		1983-1997		1983-1997
Finlinson, Jon A.				2004-
Hamblin, Joe D.			2004-2006	1986-2006
Hyde, Terry W.			1983-1985	
Killian, Dennis K.		2002-2007		1983-2007
Mincer, Norman A.				1984-2004
Novobilski, John A.	Interim President 1982			
Smith, Stanley L.				2004-2005
Stowell, Roger W.			2006-	2006-

**EXHIBIT #4**

**INTERMOUNTAIN POWER SERVICE CORPORATION  
ORGANIZATIONAL CHART  
2009**

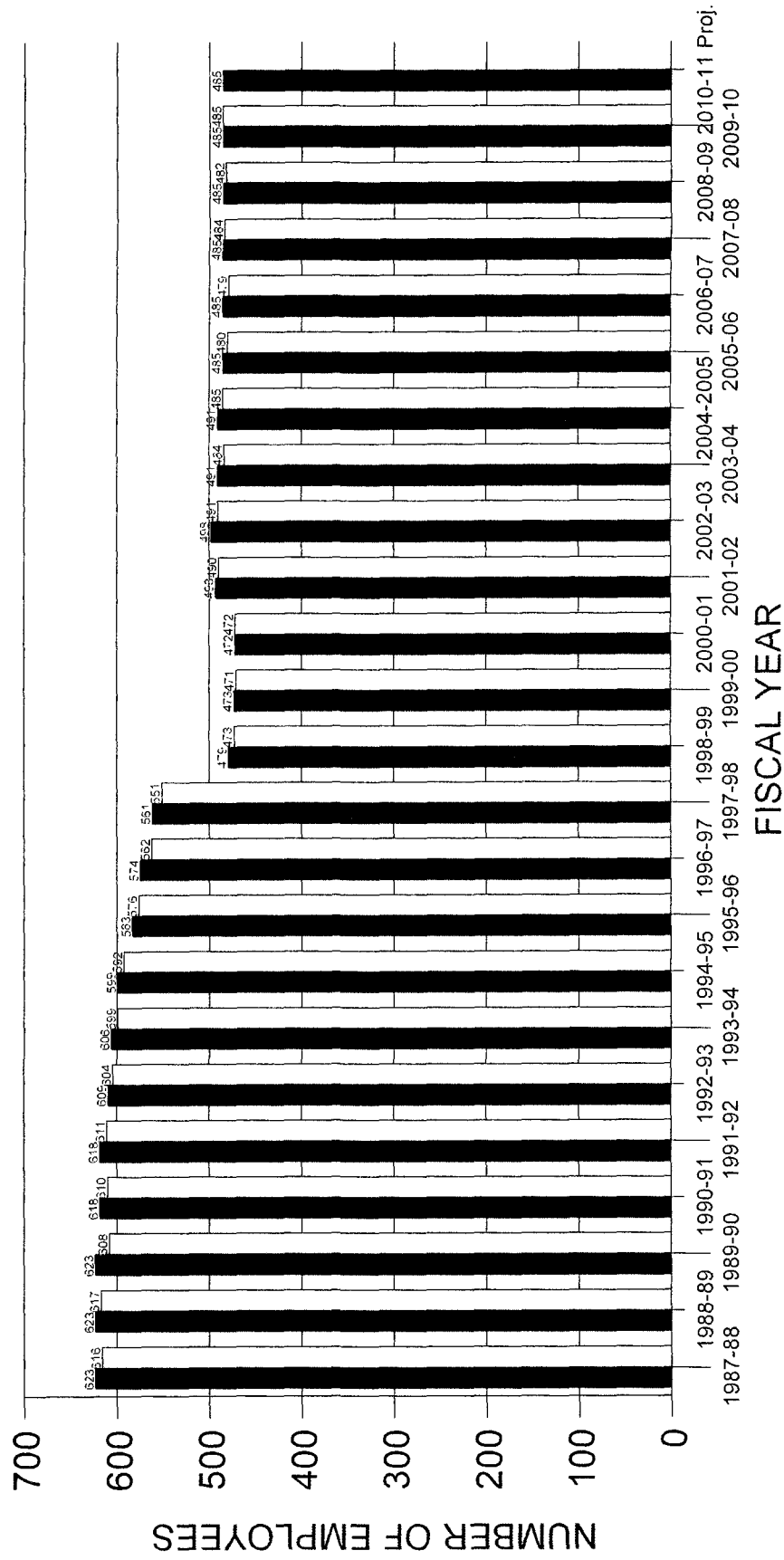


Total Employees  
484 - 2009

# INTERMOUNTAIN POWER SERVICE CORPORATION

## EXHIBIT #5

### HISTORICAL STAFFING CHART



BUDGETED
 ACTUAL

## EXHIBIT #6

### INTERMOUNTAIN POWER SERVICE CORPORATION SAVINGS AND RETIREMENT COMMITTEE

Name	Chairman	Ministerial Officer	Secretary	Committee Member
Chapman, S. Gale*		1984-2002		1984-2002
Clay, Neil H.				1986-2004
Cross, George W.		2002-		2002-
Hamblin, Joe D**				2004-2006
Hill, James P.			2006-	2006-
Hyde, W. Terry*				1984-1986
Mecham, Walter M.+				2007-
Michaelis, Clifford C.+				1999-2007
Nielsen, Reece D.*+	1987-1998			1984-1998
Stowell, Roger W.*			1984-2006	1984-
Tipton, Guy K.*	1984-1987			1984-1987
Tucker, William H.	1999-			1987-

\*Original committee members in 1984 when the committee was organized.

\*\*Replaced Neil H. Clay.

+Representative from the Intermountain Power Agency.

•Steven R. Jackson has served as Resource Assistant to the Committee since 1987.

••Ellen Lewis served as Resource Assistant to the Committee since 2006.



**EXHIBIT #7**  
**AN ORGANIZATIONAL ASSESSMENT**  
**OF**  
**INTERMOUNTAIN POWER SERVICE CORPORATION**

**COMMENTS**  
**DECEMBER 21, 1987**

**PREPARED FOR:**  
**LOS ANGELES DEPARTMENT OF WATER AND POWER**  
**AND**  
**INTERMOUNTAIN POWER AGENCY**

**POWER MANAGEMENT ASSOCIATES, INC.**  
**10650 Hickory Ridge Road**  
**Columbia, Maryland 21044**  
**(800) 638-3838**  
**(301) 964-6100**

## **COMMENTS**

The Intermountain Generating Station (IGS) is a two-unit coal-fired electric generating station located in Delta, Utah. IGS is a sophisticated, modern, highly computerized facility. Since the station is sited at a considerable distance from the Headquarters of the Operating Agent and is in a remote area, it is forced to be self-sufficient in many respects.

IGS is a new facility. Unit 1 has been in commercial operation since June 1986 and Unit 2 recently became commercial in May 1987.

The station is operated by the Intermountain Power Service Corporation (IPSC) under a services contract with Intermountain Power Agency (IPA) and administered by the Los Angeles Department of Water and Power (LADWP), the Operating Agent.

At this time, the IPSC organization's work is undergoing a transition from the start-up phase to a routine operating mode. While technical start-up problems remain, the main thrust now is to operate the units efficiently as commercial power plants, to develop the staff into a stable, experienced work force, to ensure continued high availability, and to enhance the future reliability and efficiency of the equipment.

## **PMA Assignment and Approach**

The Operating Agent, LADWP, retained Power Management Associates, Inc., (PMA) to conduct a broad assessment of the operations of IGS.

Before and after arriving at IGS, we reviewed a large number of reports, budgets, programs, position descriptions, brochures, special studies, and other documents relating to IPSC and the Station.

We began our assessment work at a kick-off meeting on October 6, 1987. The President of IPSC and his two Department Managers and three Superintendents presented an overview of each Department's organization, work, staffing, goals, and plans. We then began a series of interviews with officers, managers, supervisors, and hourly employees.

We attended two previously scheduled meetings with IPSC and LADWP representatives to listen and to evaluate the process and content. We visited many areas of the Station and its outlying support areas to observe conditions and operations at first hand and to meet employees for interviews.

We also toured the entire project with the IPSC President to get an understanding of the facility and the people.

## **The IGS Environment**

Each utility operates in a unique environment, including factors that are company or plant specific, which makes it difficult to make valid direct comparisons to other plants in other areas. Work rules, staffing levels, and plant procedures, to be appropriate, must, in a large measure, be determined by the special characteristics of a specific plant.

In making an assessment of the organization of IPSC, some of the factors that must be considered are:

- IPSC, as an entity, is a non-profit company financed by funds from revenues of participants, IPA, a political subdivision of the state of Utah, and, as a result, must operate in an environment quite different from a plant owned by an investor-owned utility.
- IPSC must operate under the surveillance of multiple owners, many of whom have only cursory knowledge of bulk power generation.

- IGS is sited in a remote, rural setting, far from the Operating Agent, LADWP.
- Not to be discounted is the fact that the prevailing culture is unique to the state of Utah.
- The Operating Agent also has limited experience in managing a large coal burning generating complex equipped with many state-of-the-art engineering innovations.
- IPSC, as an operating company, has been in existence for a relatively short time (commercial operation of Unit 1 since June 1986 and Unit 2 since May 1987). In bringing the plant into operation, there was neither a corporate history on which to draw nor a cadre of experienced company people with which to staff the plant.
- It was necessary to recruit and train an entire plant staff from scratch. People had to be selected, trained, and assigned to most mid-level supervisory positions without years of seasoning experience.

Although we may have apprehensions concerning the general experience level of the total staff, it is PMA's assessment that the organizational structure at IPSC is an appropriate framework in which the plant staff can mature. Our judgement is that the plant staff must be given the opportunity to "settle down" and demonstrate their competence. We recommend that full support and encouragement be given to the plant staff and that the Operating Agent and others exercise patience, attempt to minimize the insecurity of the staff, and concentrate on team building in the immediate future. This is not meant to infer that the Operating agent should relinquish its policy making responsibility or that it should not monitor and evaluate the performance of the plant. However, we recommend that the plant staff have more discretion in implementing established policy, and that all plant activities be directed by plant supervision and management.

### **Staffing Development**

The staffing level at IGS is currently at 603 and calculates to 36 per 100 MW. This is higher than the industry average, but it is deemed proper and appropriate by PMA for many reasons. Unique circumstances requiring extra people are:

- The plant is not a part of a larger generating system with a pool of experienced power plant people on which to draw.

- The plant is still in its "immature equipment" phase, and certain equipment deficiencies have not been resolved with manufacturers.
- A tremendous amount of training should be, and is, being done.
- A significant amount of work that is normally considered "front office," such as personnel, accounting, time keeping, and purchasing is done at the plant.
- The remote location fosters a "self-reliance" concept and results in telephone, data transmission, elevator, and all cleaning services being performed by employees rather than outside contractors.

PMA endorses the current employee authorization and recommends that a review of the needs be undertaken in about two years and after the first major overhaul is completed.

### **Performance of Overall Departments**

The performance of IGS to date has been outstanding for a new plant, considering that commercial operation of Unit 2 is measured in months and, for Unit 1, in less than one and a half years. Few utilities meet the availability and capacity factors achieved in such a short time. Certainly this performance attests to a well designed and constructed plant. Much credit; however, must be given to the operating staff and particularly to the management of this inexperienced group.

There have been operator errors causing plant shut downs; however, unsatisfactory operator performance has been significantly reduced. For instance, from June 1986 to January 1987, there were ten (10) downs caused by improper operator actions. It should be understood these occurred during initial commercial operation of Unit 1 and during the start-up phase of Unit 2. From January 1987 to June 1987, this unsatisfactory operator performance was reduced to three (3) incidents. Since June 1987, there have been no unplanned shut downs as a result of operator actions. All unplanned trips, initiated by operator error or equipment failure, are investigated, documented, and reported to the Operating Agent.

PMA sampled the incident report files and found the reports well prepared. Each of those sampled included a good engineering analysis of the facts. Accurate fact gathering and analysis is enhanced by modern control room equipment that automatically documents "first out," sequence of events, and other plant parameters in a hard-copy print out.

## **Plant Cleanliness**

Observations concerning the Operations Department would not be complete without a comment concerning plant cleanliness. IGS is an outstanding exception in the industry. It is true that the plant design facilitates cleanliness, incorporating such systems as an installed vacuum service, but the excellent results would not have been achieved without supervisory and management attention and the support of the total work force. An outsider gets the immediate impression that there is real pride in ownership by all.

## **Performance - Maintenance Department**

The Maintenance Department has developed from people with diverse backgrounds into a well-trained and motivated group. The Department has introduced specialty crews in some areas, and excellent facilities have been provided. The organization, structure, and staffing have served the early operation of the plant extremely well. Equipment is well maintained, and the plant is clean. The early introduction of a computerized maintenance management system attests to the good planning for maintenance and complements the other progressive features at IGS. At this time, performance of the system is satisfactory, but further training and promulgation of the full potential will provide greater benefits and increased productivity.

## **Performance - Technical Services Department**

The accomplishments of the Department have been significant, considering the brief period the organization has been at full strength. For instance, a comprehensive Results Engineering Program has been put together and submitted to the Operating Agent for approval. Considerable progress has been made in setting up this program in advance of final approval by the Operating Agent of the proposal. Sound engineering analysis has provided solutions to serious problems associated with a boiler feed pump and coal mills. Good work has been accomplished in evaluating performance guarantees of major equipment supplied by the various vendors. This work may prove invaluable in final negotiations of warranty performance with equipment vendors. Significant engineering is also evident in the analysis of condenser tube failure. In summary, the accomplishments of the Technical Services Department have demonstrated a degree of technical competence that is unusual for such a young plant. We believe the Technical Services Department is the strongest department in the plant and a very valuable asset to IGS in these formative years.



## **Results Section and Reliability Group**

The work being accomplished in the small Reliability group (one engineer and two technicians) demonstrates technical excellence and should continue to be supported. Two important programs, vibration analysis of rotation equipment and system failures, are being pursued. In particular, the work being accomplished on vibration analysis is innovative technology and is certainly unique at the power plant level. The testing equipment used by this group represents sophisticated state-of-the-art instrumentation.

## **Assessment - Support Services Department**

The Department is responsible for a wide variety of administrative activities in support of the other departments. Although many functions the department administers are traditional and necessary in the industry, the level of support required at IPSC is greater than in most plants in multiple plant utilities. Many functions fully staffed at IPSC are supported in a greater measure by the corporate staff. We believe the level of support provided internally by IPSC is appropriate considering the atypical situation at IPSC.

## **Performance - Support Services Department**

The Department is functioning satisfactorily and providing adequate support to the other departments. We were certainly impressed by the cooperative attitude of all employees and their recognition of the fact that they have a job only to support others. The Superintendent is a capable and well-qualified individual. PMA probed most deeply into the areas of training and warehousing, and were well satisfied that routine functions are properly performed. The Department has accomplished a great deal in a relatively short time.

## **Administrative and Technical Support**

External Administrative and Technical support for IGS comes from the Operating Agent to IPSC. The relationship is directive and supportive with formal interfacing at the top and considerable advisory and supportive interfacing between the LADWP staff and the IPSC line managers and supervisors. For example, to implement the official Water Management Procedures or the Accounts Payable Procedures, the Section Head often discusses details of implementation with appropriate LADWP staff.

We believe that the interfacing between LADWP and IPSC is commendable and helps to expedite normal processes.

## **Labor Pool**

One of the requirements of staffing the IPSC organization was to hire a very high percentage (85 percent) from the residents of the state of Utah. This has been accomplished; and, though some types of experience were hard to find, has many beneficial aspects, including a stability in the work force. IPSC managers have found the local hiring area to be a good source of people who can become reliable hourly employees. Work ethic in the area is strong, but prior power plant or related experience is rare, and very significant training is required for new hires.

This observation was confirmed by our interview with the Utah Power & Light Superintendents.

## **Weather**

In addition to the remote location, there is a weather aspect to power plant operation in Delta, Utah. Truck and railcar deliveries of coal, though over relatively short distances, can and do freeze in the winter months. This complicates the automated train unloading and makes it more labor intensive as well as slow. Reclaiming from the coal pile also becomes a problem.

We discussed the weather aspects with Utah Power & Light Superintendents and they told us that they experience frozen coal on some occasions. They break the crust with their coal handling dozers and, at Hunter, have installed lump crushers or breakers at the reclaim and truck dump hoppers. Graders, sheep's foot compactors, and other heavy equipment have not been effective. Neither of these stations receives rail coal since Huntington is a mine-mouth plant and Hunter is close enough to the mines to have all of its coal brought in by truck.

**REASSESSMENT  
OF  
INTERMOUNTAIN POWER SERVICE CORPORATION**

**COMMENTS  
SEPTEMBER 21, 1990**

**PREPARED FOR:  
LOS ANGELES DEPARTMENT OF WATER AND POWER  
GENERATION EXTERNAL MAJOR SECTION  
TASK 5 AGREEMENT NO. 10827**

**POWER MANAGEMENT ASSOCIATES  
71 Inchcliffe Dr.  
Gales Ferry, CT 06335  
(203) 464-7652**

## **COMMENTS**

Power Management Associates (PMA) appreciates the courtesies to our Consultants by all Intermountain Power Service Corporation and Los Angeles Department of Water and Power personnel during the conduct of this organizational and managerial "Reassessment."

We congratulate all associated with and responsible for any aspect of management, operations, maintenance, technical, engineering, support and service activities, and oversight functions, for their accomplishments since our last visit in 1987.

We find that there are many new programs such as the Incentive Bonus Program, Trade School Training, the Total Predictive Maintenance Program, and the new Clearance Tagging System that are especially commendable.

The entire operation remains a model, in every respect, for the power industry. The splendid record of availability and capacity since commencing commercial operations is a challenge to every power plant in this country. Technically you stay at the leading edge in innovative program and equipment application.

Physically, the site, the generating station, and all support facilities, look and operate better than they did when they were brand new.

The people have matured, with the site, into a cohesive and mutually supportive organization of power industry professionals.

All of the above has made our task of identifying areas where there are opportunities for meaningful improvement most difficult.

We hope this report to be a reflection of your achievements and a beneficial and useful contribution to your continued success.

## **INTRODUCTION**

### **The Project Team Assigned**

Power Management Associates (PMA) conducted this reassessment of the Intermountain Power Service Corporation with a team of five PMA Senior Consultants, all of whom had been part of the team that performed the 1987 assessment.

PMA assigned Byron Collier as Project Manager, John Salomon as Team Leader and Norman B. (Buz) Bessac, Harry S. Fox, and E. L. (Red) Thomas as Team Members:

Byron H. Collier is the president of PMA and has served as Project Manager on many projects. Mr. Collier previously served as General Physics' Chief Engineer for Operations Services (Nuclear and Fossil). Before that, he was Chief Engineer for Operations Services (Fossil and Nuclear) for Stone and Webster Engineering Corporation, and a Project Manager and a Project Engineer for a major utility project.

John H. Salomon has served as Team Leader and as Project Manager on a variety of projects. Mr. Salomon is the former superintendent of Production of United Illuminating (UI) Company, responsible for the management of the utilization, operation, and maintenance of four fossil fuel stations. Previously, he served as Plant Superintendent for UI's Bridgeport Harbor Power Plant.

Norman B. (Buz) Bessac is the former Manager of Generation Project for Montana Power Company, Director Special Projects, Daniel Power Division, and Manager Nuclear Generation, Carolina Power and Light. He is a registered Professional Engineer, Nuclear Engineering in California.

Harry S. Fox is the former Director, Fossil and Hydro Power for Tennessee Valley Authority. Mr. Fox has broad experience in fossil, hydro, and nuclear power plant operation, maintenance, and management. During his 36 year career with TVA, he held engineering positions in five fossil plants. Later, he managed the central engineering and maintenance organizations, and then became responsible for the production of the F&H plants of the 25,000 MW system. For the past 5 years he has done consulting for the electric utility industry throughout the United States and Canada.

Edward L. (Red) Thomas was the initial Director, Training and Education Division, at the Institute of Nuclear Power Operations (INPO). Prior to this, he was Manager of Training and Safety Services and Plant Manager of Duke Power Company's Marshall Steam Station. Mr. Thomas has over 37 years experience in nuclear and fossil power plants.

## **Approach to Work Assignment and Method**

PMA provided five Senior Consultants to perform preparation and field work, and to make verbal and written reports. The preparation process consisted of three mandays of project planning and a review of the 1987 report.

The field work, including production of this report, was accomplished in three and a half weeks. Information was gathered mainly by interviews with 41 individuals and by further document reviews at the Generating Station. Since this project is a reassessment, and the team is comprised of the same individuals from the original 1987 team, the interview process focused on areas to be reexamined and new areas of special interest, and interviewing was limited.

The team made tours and visitations throughout the plant facilities, visiting offices, maintenance shops, control rooms, and station interior. We also toured portions of the coal handling and ash transport areas.

Completion of the field work consisted of team deliberations to consider findings, identify issues, and to develop recommendations. We provided local verbal reports and held supplementary interviews while proceeding with drafting and editing this report.

## **Scope of Work Assignment**

The scope of the project covered the three subjects discussed below.

- 1) PMA reviewed those areas that were investigated during the 1987 assessment, and evaluated the status of the major recommendations in the December 21, 1987 report:

Succession Planning at top levels

Training

Prime computer update

Maintenance Organization and staffing

Operating Organization and staffing

Maintenance Management system

Overhaul Organization and staffing



- 2) PMA reevaluated the need for any inactive recommendations from the December 21, 1987 report.
- 3) PMA evaluated areas and activities not covered in detail in the 1987 study and developed some new recommendations deemed appropriate:

Stores

QA-QC

- self assessment/self audit
- investigation of significant events
- high energy piping audit
- action and related goal
- challenge logic of own decisions

New operating procedures

New maintenance instructions

New overhaul process

- Planning
- Early inspection
- Tracking and Updating of the CPM
- Coordination of in/out workforces
- Post outage critique meetings

Heat rate and efficiency engineering

Reports effectiveness

## **General Observations**

As before, during the original assessment, our reception at the station was well prepared and it was obvious that extra efforts had again been expended to help us. A Kick-Off Meeting was held, and presentations by the President and the Superintendents oriented us to the present status of the organization, and highlighted significant changes that had been made. Certain changes were the result of recommendations made by PMA in 1987, and other indicated initiatives well beyond our recommendations. We were gratified that in all cases the changes appear to have been beneficial, well implemented, and reflect good management.

An IPSC volume entitled "Supplemental Report" was handed out at the Kick-Off Meeting. It contained the individual presentations made and an updated status of action taken on PMA's original report; and became a useful guide for our subsequent

work. We appreciate the preparation work done prior to our arrival and the fine cooperation of all concerned during the assessment.

One of the most obvious changes found between the PMA assessment in 1987 and this assessment in 1990 is the self-confidence level apparent among the staff at IGS. While the plant was being successfully operated and maintained in 1987, the persons interviewed were cautious and inquiring. This was apparent in their approach to cutting-edge programs that initially were instituted and with power plant practices and with the more advanced and automated programs. On this visit we find that most people have advanced significantly in their areas of responsibility and speak with a sense of pride and assurance that what they are doing is contributing to the successful operation and maintenance of IGS. We find this to be a very positive quality that has come about from the dedicated efforts of the staff.

### **Response to Prior Recommendations**

The IPSC managers, in anticipation of our questions, had prepared an updated status report on all the recommendations in the 1987 report. The update was included in the Supplemental Report presented at the Kick-Off Meeting. Only seven items remained as "open" at the time the report was assembled, and all are either completed now, or active on a scheduled program. We are in complete agreement with the status and activity on the open items and are pleased that these recommendations are being implemented. Obviously, there are the more comprehensive type, whose full implementation takes longer to complete.

Of the other 91 recommendations in the 1987 report, only six had responses of 'Disagree.' While we feel that it would be querulous of us to present further arguments about old recommendations to a client who has obviously given careful consideration to 98 items and implemented action on 96 percent of them, we nevertheless reviewed each of the six.

Two of the recommendations involve the organizational structure, moving the security section, and combining the safety section into different reporting relationships. We find that without making the recommended changes the groups are functioning well, and we agree with the rejections.

Two other recommendations concerned reporting progress of preparing for scheduled outages and setting up the outage organization. Both recommendations are outdated now, since the outage organization and routine is well established and has had opportunities to mature.

One recommendation called for stand-up meetings of managers to report progress and problems. This is a question of management type and style, and IPSC has chosen to

find the interaction, team effort, and brainstorming in other ways. The bonus incentive plan seems to provide many of the benefits we envisioned.

The final rejected recommendation concerned who specifies the tagging of equipment to make it safe for work order maintenance. The concern we had, may have been only a semantics problem over what the planner does and what the operator does and it has been totally resolved by the new computer assisted tagging system procedures.

We are completely satisfied and in total agreement that there is no further need for any of the inactive rejected recommendations.

### **QA-QC Program**

We undertook assessment of the QA-QC activities of IPSC by a closer look at five specific areas:

- Self-assessment/Self-audit

- Investigation of significant events

- High energy piping audit

- Action and related goals

- and

- Challenge Logic of own decisions

While there are also other facets to a proper QA-QC program, we felt that these five would give us an insight about the need for a formal program at IPSC. As discussed in sections 5-5, 2-5, 4-6, 5-4, and 4-7 (under separate cover) respectively, we found that there are significant QA-QC activities in each of the areas, although they are not labeled as QA-QC. We are also aware that IPSC has many outside assessments/audits, as discussed in section 5-5 (under separate cover), and we believe that few, if any, would be shortened or eliminated by a more formal QA-QC program initiated internally. Therefore, we conclude that the introduction of a formal QA-QC program, that could add to the staff, would not be cost effective at this time.

However, we feel the IPSC and LADWP management should carefully consider and examine legal implications, due diligence, and the prudent decision making process and documentation which is required in operating and maintaining a sophisticated high energy steam plant "today."

## **Reports Effectiveness**

IPSC generates many reports on a regular basis. Most of them are very specific in content and purpose. We were especially impressed by the weekly management reports, and the comprehensive monthly station report.

The weekly reports list activities accomplished, and activities planned. They are written to the President by each of his direct reports. The weekly reports are an important vehicle for discussion, direction, and guidance. They also report certain measurable indicators of production, completions, and backlog for each department.

The monthly reports are the main body of information used by the Operating Agent (LADWP) to exercise oversight function and to generate various reports. We found the monthly report timely and very comprehensive. It is the result of a mutual effort to identify and meet the information needs of entities outside the plant, and as a record of plant statistics and major activities. We were impressed with the quality of the monthly report and especially commend the graphs and charts that illustrate the statistical data.

The monthly report is produced in the Technical Services Department, from data and text provided by all plant activities. Most of the statistical production and heat rate data is provided by the Results Engineers from computerized programs; they also produce the graphs illustrating the statistics. A rigid deadline of the 10<sup>th</sup> working day of the month following the report month is adhered to.

Presently the content of the report is still being honed to ensure maxim usefulness and benefit. Recently, additional environmental data was added, and a reduction in the amount of heat rate data is being considered. A significant effort is underway to produce electrical output data that can be used directly in the Operating Agent's report without further recalculations for adjustments such as line losses.

We reviewed other reports, most of them are produced as needed, and not on a regular periodic basis. Two exceptions being the Coal Data Report from the Fuels Lab, and the Accounting Reports showing expenditures and their allocation to various accounts. At this time it is not contemplated to incorporate these into the monthly report, and we do not find any incentive to do so.

IPSC Reports are mentioned in two other sections of this reassessment. Additional observations about the monthly Maintenance Budget Report are included in Section 3-9 (under separate cover), and the Outage/Inspection Reports are discussed in some detail in Section 3-4 (under separate cover), as part of the outage process.

**ASSESSMENT  
OF  
INTERMOUNTAIN POWER SERVICE CORPORATION**

**COMMENTS  
NOVEMBER 21, 1996**

**PREPARED FOR:  
LOS ANGELES DEPARTMENT OF WATER AND POWER  
AND  
INTERMOUNTAIN POWER SERVICE CORPORATION**

**POWER MANAGEMENT ASSOCIATES  
71 Inchcliffe Dr.  
Gales Ferry, CT 06335  
(860) 464-7652  
(860) 464-7080**

## **COMMENTS**

Power Management Associates (PMA) has just completed its third assessment of the Intermountain Generating Station (IGS) and the Intermountain Power Service Corporation (IPSC). The first PMA assessment took place in 1987, shortly after Site dedication. A separate operational assessment of the Southern Transmission System, including both the Intermountain and Adelanto Converter Stations was conducted by PMA in 1989. PMA's second assessment of IGS and IPSC was conducted in 1990.

This assignment covered in-depth evaluations of IPSC operations, including the Converter Station and the Operations, Maintenance, Technical Services and Support Services Departments.

The team reviewed previous organizational assessments of IPSC operations, addressed future competitive operational pressures and IPSC's ability to perform in a deregulated environment.

The team tracked plant improvement progress, reductions in the operating staff levels - past, present, and future, and the changes in methods and equipment since commercial operation.

PMA assigned a team of five, with Byron Collier as Project Manager, John Salomon as Team Leader, and Buz Bessac, Red Thoms, and Paul Smith as Team Members. The first four worked on PMA's prior assessments of IPSC.



## **What PMA Found**

We found a plant cleaner than we have ever seen it.

We found a plant in better material condition than we have ever seen it.

We found a plant that was operating better with respect to availability and capacity than during our previous assessments.

We found a work force that was attentive, eager to excel, knowledgeable, and polite.

We found a work force that sought you out in the plant, looked you in the eye, and asked if they could be of help.

We found 78 percent of the work force still in place from our visit in 1987.

We found the same management team in place that we had met in 1987 and 1990.

We found a plantwide "cross-training" program that has enabled IPSC to gradually reduce the number of employees in a controlled manner.

**IN OTHER WORDS, WE FOUND A WELL RUN, WELL MAINTAINED POWER PLANT THAT IS STAFFED BY A PROFESSIONAL MANAGEMENT TEAM AND WORK FORCE.**

We also found the best attitude and morale of any fossil or nuclear plant we have visited.

## **The Changing Environment and Competition**

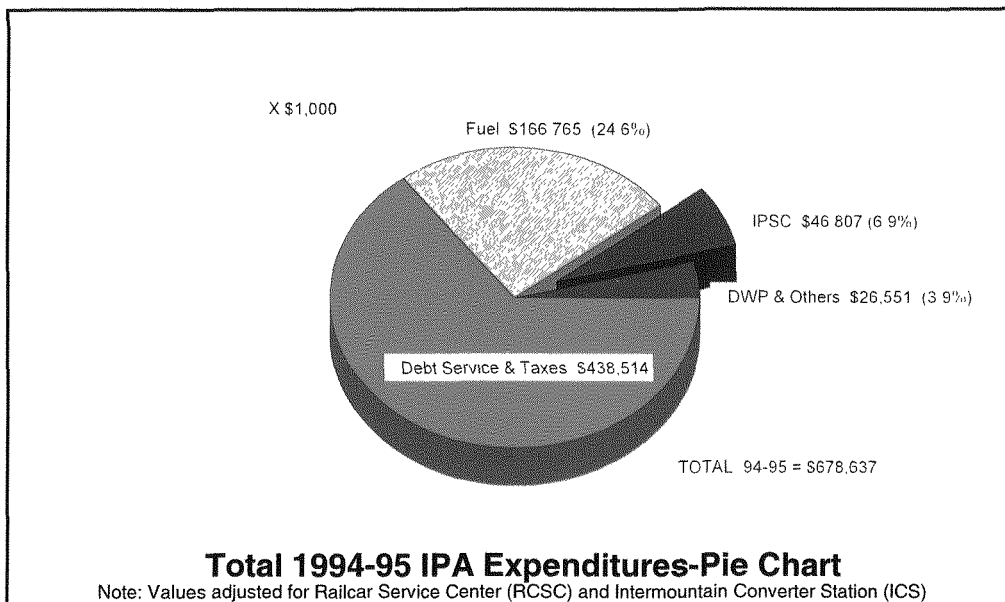
The electric power generation industry is in a period of dramatic change. This change is driven by the increasing political demand to initiate retail competition of electrical energy at an early date. On August 31, 1996 the California legislature enacted into law a bill that will implement retail competition in California no later than January 1, 1998. Power producers need to understand the new market place and position themselves for the future. Cost of power delivered to the ultimate consumer will assuredly be the driving force of the future. All factors affecting the delivered cost must be analyzed, reduced where possible and appropriate, and presented to the customer in understandable terms.

The fundamental relationship of cost of generation depends on just two factors: the dollar cost of all generation factors divided by the megawatt-hours of power generated.

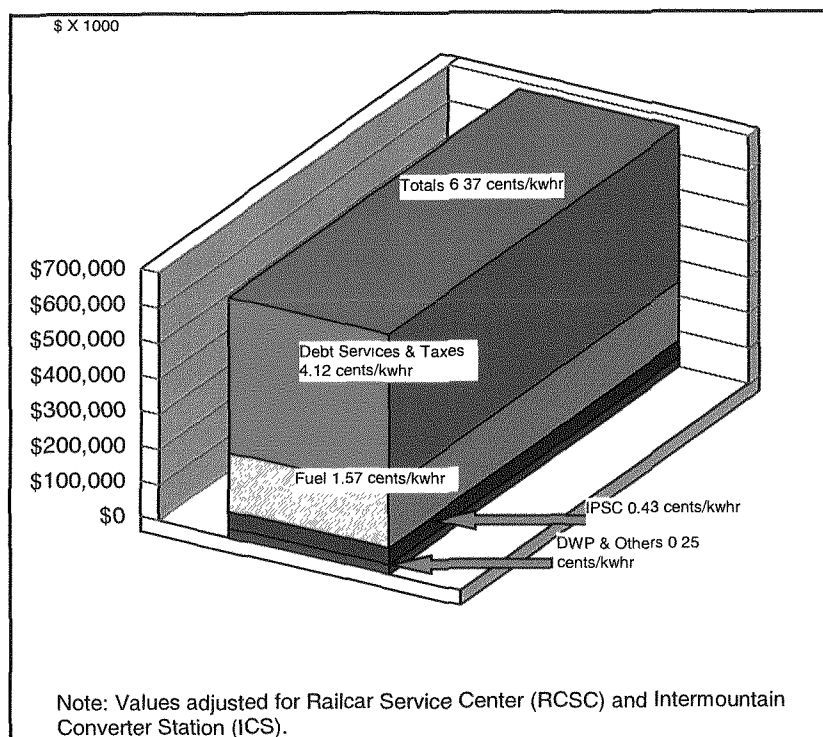
$$\text{Cents/Kilowatt-Hour}(\text{¢/KWH}) = \frac{\text{Total Generation Cost in (\$)}}{\text{Total Energy Produced in (MWH)} \times (10)}$$

Obviously the ¢/KWH can only be reduced by minimizing the value of the numerator and/or by increasing the value of the denominator.

As reflected in 1995 Intermountain Power Agency's Annual Report, the actual generation costs for 1994-1995 are as indicated below. The indicated costs were required to produce 10,648,021,000 kWh of Net Generation.



The following figure shows the contributions of each slice of the pie in the previous figure, for a total of 6.37 ¢/KWH.



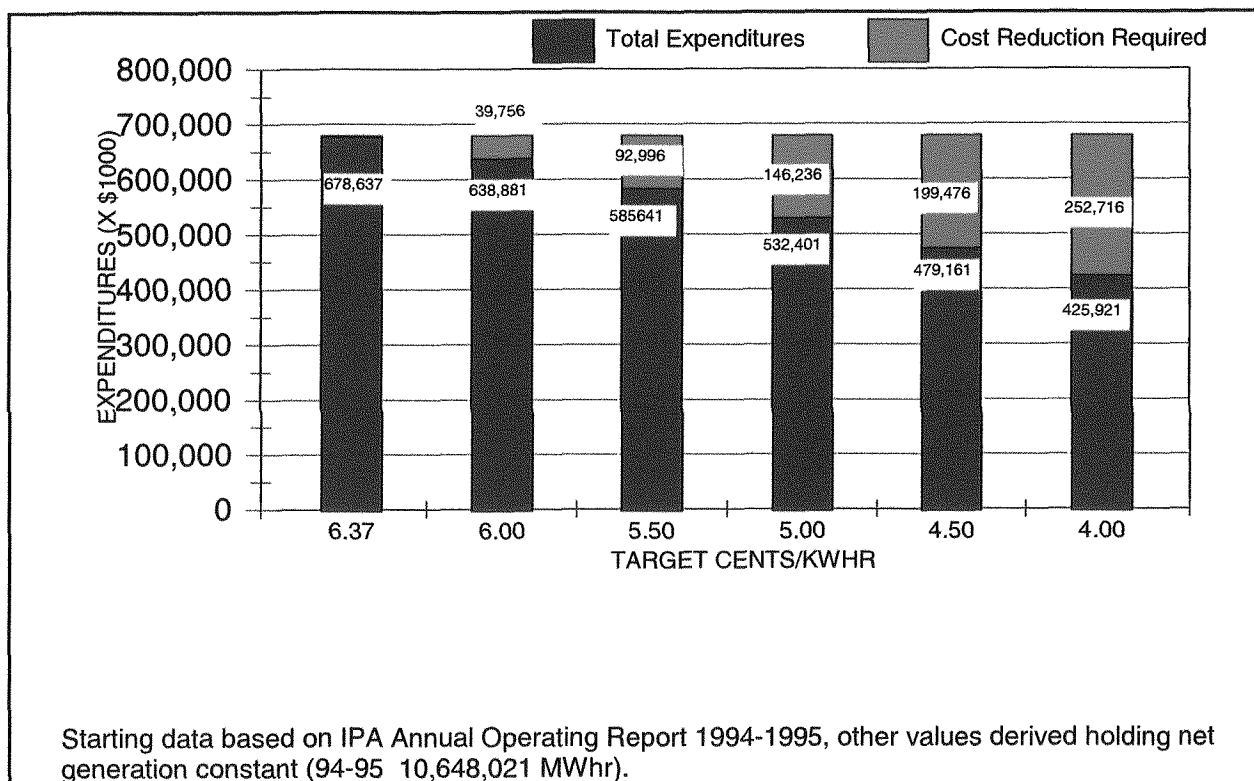
If a significant improvement is to be obtained in ¢/KWH, it is apparent that Debt Service and Fuels could make the most significant change.

A calculation was made reducing the labor in the IPSC contribution by 10 percent. This results in an insignificant improvement of just .01 ¢/KWH in the total 6.37.

### Total 94-95 IPA Expenditures

The California legislation will pose many new challenges to IGS. The debt is huge and as noted above contributes to 64.6 percent of the generation cost. PMA's expertise does not extend to clairvoyance in analyzing what the political future may hold. To mandate a 10 percent rate reduction for residential and small commercial customers and provide relief for stranded costs appears, to engineers, as a violation of the laws of nature. Debt will have to be paid down. It would appear that the solutions being envisioned may require the tax payer to join the rate payer in being the ultimate source of debt service funds. Utah taxpayers may not be anxious to assume this extra burden.

In spite of the many challenges, every reasonable effort should be focused on reducing the debt service burden. It is the overriding factor in generation costs and the ability of IGS to obtain a competitive posture.



### Total Cost Reductions Required to Achieve a Target ¢/KWH

Only a glance at the above Figures is necessary to appreciate the magnitude of the problems this new legislation poses for IGS.

### Operations

The Operations Department provides operations supervision and labor for two units around the clock, every day of the year. It also provides staffing for all the peripheral systems such as coal handling; water supply, treatment, and disposal; sludge and ash disposal; and limestone and chemicals receiving.

### Changes in Operations Department Personnel

Operations has reduced its staffing level from 170 in 1987 to 145 in 1990 and to the present actual of 144. The present count includes Safety and Training, a group of 15 employees who were not in the 1987 or 1990 count. Thus the actual operating position reduction is 41, or 22 percent. This is not unreasonable in view of the increased experience of the personnel and the expertise that has been developed to respond efficiently to operating needs.

## Comparison

The net effect of all improvement efforts can best be appreciated by comparing the IGS performance to other coal-fired stations. We have selected eight stations that consist of two units rated 500 MW or larger, that operate scrubbers for stack gas cleaning. The table presents latest available Utility Data Institute detail statistics, and is for calendar year 1994.

Of this group of similar stations, IGS has the second lowest \$/MWhr operating and maintenance cost, notwithstanding the fact that it has the highest staffing level. This indicates that the combination of IGS equipment, IPSC staffing and work methods being employed are the most successful combination for a minimum unit production cost.

This table also illustrates that the coal costs for IGS are higher than all of the Western stations, and that this has a very profound effect on the total \$/MWhr cost.

### CHART OF STATISTICS OF TWO UNIT COAL-FIRED PLANTS SIMILAR TO IGS

PLANT/ST UTILITY	NET GEN- GWH	NET CAP	EMP- LOY- EES	O&M COST (MWhr)	FUEL COST (MWhr)	TOT COST (MWhr)
LaCygne/KS KCP&L	8174	1326	292	4.71	9.93	14.64
Pleasants/PA Monong P Co	7507	1242	245	5.30	12.63	17.93
Seminole/FL Semin El Co	8639	1230	293	3.74	19.16	22.90
St Jhns R/FL Jaxvl El & FPL	9854	1248	499	3.90	15.99	19.89
Coal Creek/ND Coop Pwr Assn	8063	1012	237	2.83	9.16	11.99
Colstr 3&4/MT Montana Pwr	10936	1556	347	4.60	8.10	12.70
Limestone/TX Houston Ltg	11335	1629	373	3.78	11.69	15.47
Newton/IL Ill Pub Serv	5232	1235	239	5.36	17.50	22.86
IGS/UT Int Pwr Assn	12191	1640	593	3.16	14.37	17.53

- 1) IGS has the highest Net Generation - the key to improving all statistical data is:  
"Generate, Generate, Generate."
- 2) With better fuel costs IGS would be hard to beat.
- 3) The answer is fuel cost, not O & M.

## **Maintenance**

### Performance

IGS is a "stand alone" plant, which was very well designed, well built, and has been exceptionally well operated and maintained. The plant has achieved excellent performance results since commercial operation. In reviewing Utility Data Institute information, IGS is one of the best of any scrubbed, coal-fired plants with units of 500 MW or greater in categories of net capacity factor, forced outage rate, and equivalent availability. The following lists the plant production data through the end of last fiscal year:

#### STATISTICAL AVERAGE 1987-1996

Net Unit Heat Rate in Btu/kwh	9,646
Equivalent Availability in %	90.04
Forced Outage Rate in %	0.65
Net Capacity in %	80.48

In PMA's opinion preventive maintenance, predictive maintenance, productivity, and cost control rate as "very good" to "outstanding." The maintenance planning group has few rivals, if any, in areas such as detailed cost tracking, productivity enhancement, and maintenance instructions. Outage planning is a team concept and a cost conscious effort. This effort has involvement and support from upper management. Another statistic that demonstrates IGS is one of the best performing coal-fired power



plants in the United States, is the following table, which displays the number of boiler tube leaks resulting in a unit outage from 1990 through 1996:

<u>YEAR</u>	<u>UNIT #1</u>	<u>Unit #2</u>
1990	0	1
1991	1	0
1992	1	0
1993	0	0
1994	0	0
1995	0	1
1996	1	0
TOTAL	3	2

This is an outstanding performance record and demonstrates the solid organizational, operational, and maintenance efforts at IGS.

The historical results demonstrate that overhauls have been cost effective and, for the most part, timely. Hourly employee starting/quitting times are like clock work, as are lunch and break times. Not a single employee was observed not wearing hard hat and safety glasses. Plant rules seem very well established and observed by all (a credit to management and supervision). Safety is taken very seriously, and unsafe behavior is not tolerated. The OSHA incidence rate for maintenance last year was below the national average. Communication to the first line employees is consistent.

In 1993, Maintenance Technology Magazine awarded IGS "Best Maintenance Organization-Electric Utility." This award was based on productivity, maintenance cost, maintenance programs, coordination, and management. This prestigious recognition is well deserved.

No matter how good an organization is, there is usually always room for improvement. The greatest challenge; however, for IGS in the future, will not necessarily be for improvement, but rather, to continue to maintain their outstanding performance record to date.

## **Technical Services**

The Technical Services Department includes four Sections: Engineering, Computers, Laboratory, and I & C.

The technical excellence and dedication of the people in the department has played a leading role in the outstanding record of IPSC. One indication of the technical quality of the staff is that 21 of the managers and engineers are registered as Professional Engineers (PE) in the state of Utah. The department has the depth, experience, and maturity to function as a stand-alone technical arm of IPSC. The Technical Services Department is the strongest plant engineering group PMA has visited and, in many respects, superior to many corporate organizations servicing multiple plants.

Engineering Services is responsible for providing professional engineering expertise to support and maintain the generation and power blocks, all outside plant areas, and for the traditional results engineering function.

Computer Services is responsible for the maintenance, software development, user support, system monitoring and performance, system installation, and engineering support of all major data and communication systems including the plant simulator.

The Primary Business Program, the Plant Instrumentation Program, and an array of smaller utility programs are pooled together by a Local Area Network (LAN) to provide a sharing of resources and bring information to the screens of approximately 300 PCs and workstations throughout the plant.

Electronic Data Interchange (EDI) is being used more and more in an effort toward a paperless flow of information both within the plant and any outside activity that can be connected by a modem.

The Computer Section has introduced modern document management to IPSC. A host of documents and permanent records have been scanned and transferred to personal computer systems for storage and retrieval. The latest plant drawings and P&IDs are readily available throughout the plant on local computers and workstations for printing and use. Real savings in labor and storage facilities have been realized using modern computer based techniques.

Laboratory Services is composed of the Water and Fuels Laboratories, the Environmental Group, and the Water Manager.

Instruments & Controls maintains the plant instrument and automatic control systems. This includes troubleshooting and maintaining the analog and digital logic systems, programmable controllers, and computerized control systems.

## Plant Performance

The Intermountain Generating Station (IGS) was designed as one of the newer "state-of-the-art" power plants in the country. It has proven to be one of the best operated and maintained, most reliable, efficient, and environmentally clean plants in operation. The Technical Services Department has had a lead role in coordinating the efforts of the total plant staff to enhance the original plant capabilities.

## Availability

The Production and Availability statistics for the plant are impressive. The average for the last 9 years of significant plant statistics include:

- 11,290,000,000 Kilowatt-Hours of Net Generation
- 4,565,000 Tons of Coal Burned
- 9646 BTU/KWH Average Net Station Heat Rate
- 90.41% Availability Factor
- 80.48% Net Capacity Factor
- 89.02% Net Output Factor

The IGS units are two of the most reliable units in the country. For comparison purposes, the last five years of performance factors have been averaged and listed in the following table.

As can be seen, IGS compares extremely well with the utility information published by the North American Electric Reliability Council (NERC) and the Generating Availability Data System (GADS). The four fossil fuel classes chosen for comparison with IGS include the following:

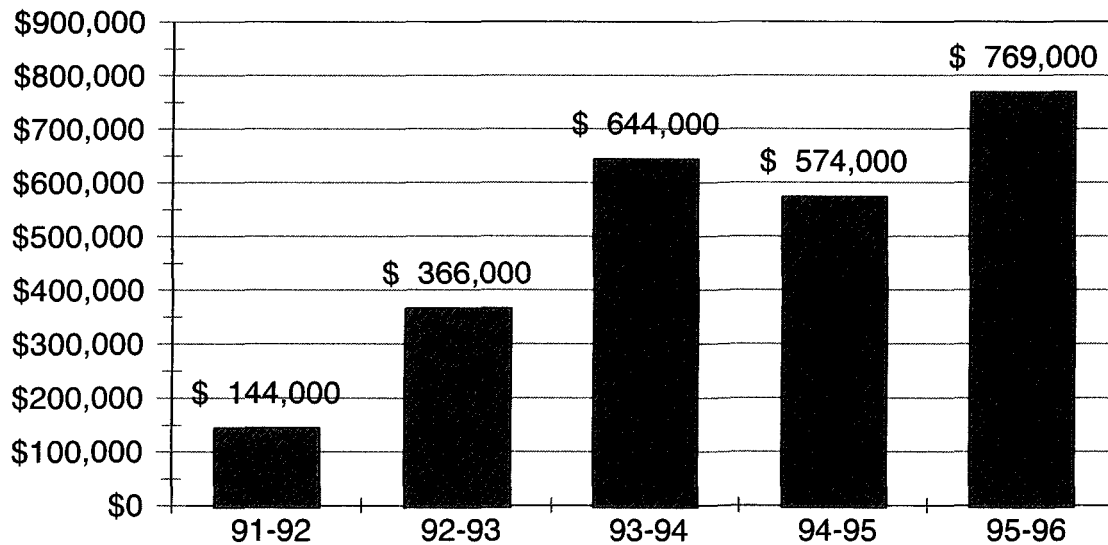
- 25 coal-fired units in the 800 to 999 MW net range
- 916 coal-fired units of all sizes
- 34 fossil units in the 800 to 999 MW net range fired by coal, gas, or fuel oil
- 1537 fossil units of all sizes fired by coal, gas, or fuel oil

1991-1995 5 yr Average	IGS	25 Coal Units	916 Coal Units	34 Fossil Units	1537 Fossil Units
Number of Utilities	1	9	130	34	163
Number of Units	2	25	916	34	1537
Availability Factor	91.43	86.30	85.13	86.37	85.36
Equivalent Availability	90.87	84.75	82.66	83.73	82.92
Forced Outage Rate	0.22	5.03	4.99	5.34	5.56
Net Capacity Factor	79.94	65.30	60.45	53.65	50.47
Net Output Factor	87.36	80.84	77.47	75.13	72.70

**Utility Availability Comparison**

**Fly Ash (as a revenue generator)**

The combustion process is closely monitored. One benefit is that the fly ash has very low unburned carbon content, which makes it very attractive as an additive to concrete mixes. Pozzolan International has contracted to purchase the unused fly ash. For the budget year 1995-96, approximately 136,200 tons were sold for \$769,000.

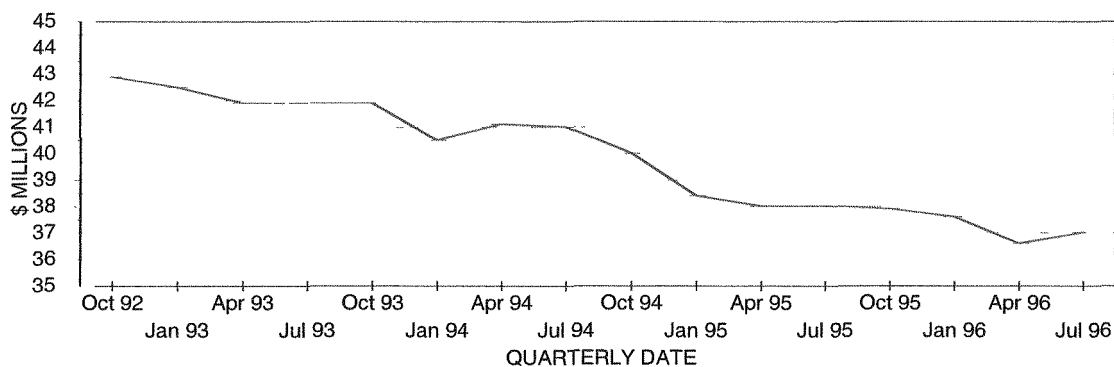


**Annual Fly Ash Sales**

## Support Services

The Support Services Department at IGS provides those non-technical services necessary for the operation of the plant as well as other non-technical services required by LADWP, IPA, other project participants, and the public in the plant area. The department operates in a manner similar to one or more related corporate office staff groups in a multi-plant utility. As a single plant utility, all services necessary for operation of the plant, as well as other outside services required, must be provided by the plant staff. Services provided by this department include accounting, personnel services, purchasing, stores and storekeeper, public relations, and clerical/stenographic services.

An excellent example of cost consciousness is the control of inventory levels. This is essential in controlling O&M costs. IPSC has an ongoing Inventory Review/Reduction Program, which has been instrumental in reducing warehouse inventory levels. Over the last 5 years, this effort has reduced the inventory levels to \$37 million, a reduction of \$5.9 million. Through a joint effort with the Planning Group, inventory levels are continuously evaluated by a comparison of actual usage and stock levels. This effort ensures that appropriate stock levels are maintained for normal and/or critical use and helps reduce the level of seldom used items.

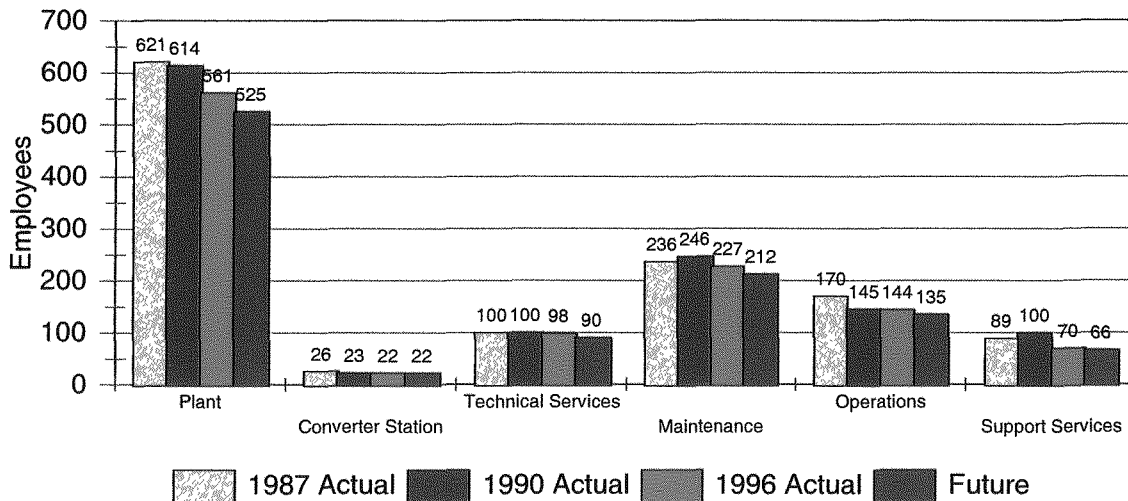


**Warehouse Inventory Value By Quarter**

## Improvement Programs Implemented and Planned

### Manpower Reduction Plan

Since PMA's first assessment in 1987, plant staffing levels have declined steadily. The following figure depicts this decline and also shows the plant goal for future staff reductions in response to the demands of a more competitive environment and consistent with IPSC's operating philosophy.



### IPSC Actual and Future Staffing By Department

Inherent in this philosophy is the belief that plant staffing levels should be maintained at the lowest level possible so long as safe, efficient, and reliable operation is not compromised. Management also believes that this is only possible through the efforts of a well trained, skilled, and a properly motivated work force.

The Plant, by all industry performance measures, has operated at or near the top in all categories. Management is, and always has been, concerned about controlling costs not directly related to operations, maintenance, or other support activities. This concern is reflected in the "do-it-yourself" attitude that pervades the thinking of employees as well as that of managers and supervisors.

To maintain this competitive advantage and accomplish the staff reduction goals, IPSC has formulated a plan to be executed over the next 2-3 years. This plan relies on normal attrition, and is targeted at 3 percent per year, to effect the desired changes rather than resorting to layoffs and/or terminations.

Managing the reduction through attrition allows time for:

- Proper Training of Replacements
- Increased Productivity as Skills Improve
- Maintaining High Employee Morale

When considering the negative impact on morale and productivity experienced by other utilities after a downsizing, PMA believes that the IPSC approach to staff reduction can accomplish the desired result with a minimum of negative effects. We totally endorse the proposed plan for staffing reductions, but with the cautions enumerated above.

### Industrial Park Concept and Economic Development Plan

During construction of Units 1 & 2, a number of office building and storage facilities were built. The necessary services including water, sewer, power, heating and cooling, and communications were also developed. Since completion of construction, these buildings have been only partially occupied. They remain in excellent condition and are ideally suited for occupancy by a wide variety of users. In addition to these buildings, the site of over 4000 acres is developed with railroad connections to the Union Pacific line near Lynndyl, Utah. Additional resources such as waste heat, process steam, and process water are available on the site. A wide variety of other support services are available from the Plant staff. This complete package of land, buildings, and services have the potential for generating significant revenues.

### **What Happens if LADWP or IPA Were to Mandate a 10, 20, or Even 30 Percent Reduction in the IPSC/IGS Work Force?**

After recovering from shock, IPSC would carry out the directive, realizing that a 10 percent reduction in force lowers the cost of generation only .01 ¢/KWH.

The plant would continue to operate with respectable availability and capacity - at least for awhile.

In two to three years, both availability and capacity would begin to decrease.

The well-designed equipment redundancies would not be able to keep the units on line as a base-loaded plant for indefinite periods of time.

Equipment would soon be tagged out permanently and used for spares.

Before long the cost of returning the plant to present operating condition would be too much to even consider by either IPA or LADWP.

After five years you would have a tired, worn out, old plant which costs so much to operate that you would consider shutting it down or selling for a fraction of initial investment.

IS THIS WHAT ANYONE WANTS? We do not think so.



This may be why, upon reorganization, new management teams are brought in for periods approximating five years. FIVE YEARS is that magic number where overheads are drastically reduced, operating costs are slashed, the organization is restructured and renamed, position titles are changed so that no one knows who does what, if publicly held, the stock always goes up, and the new management team takes its bow, collects enormous bonuses and/or stock options, and as the sun sets in the West, leaves in a cloud of dust.

What PMA heard from the Coordinating Committee members the last two times we had the privilege of addressing them was a concern that the investment be protected and that the Intermountain Generating Station be as good as new twenty years after the second unit went commercial.

Presently, you are ten years into plant operations and you essentially still have a BRAND NEW PLANT. (In our opinion, better than new.)

## **IPSC History Index**

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Annual Laborer Test .....	2001
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Distributed Control System (DCS) Replacement Project, Start of . . .	2002
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